A Cross-Linguistic Investigation of the Order of Attributive Adjectives

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List of Abbreviations:

ACC	Accusative case
ADI	Average difficulty index
ADJ	Adjective
ADJ-BIG	Adjective bigram
ADJN	Adjectival noun
ADV	Adverb
ART	Article
CMX	Concordial morpheme (X indicates noun class)
COL	Colour term
CONJ	Conjunction
CSM	Construct state marker
DE	Chinese descriptive indicator *de*
DEF	Definiteness marker
DeN	Denominal adjective
DET	Determiner
DeV	Deverbal adjective
DP	Descriptive possessive
FEM	Feminine
FOCUSSED	Focus marker
HEAD	Phrasal head
IMPERF	Imperfective aspect marker
INT	Interrogative particle
LIG	Ligature/Linking particle
LOC	Locative
MASC	Masculine
MOD	Modifier
MOD-I	Adjective from Bache's (1978) first modification zone
MOD-II	Adjective from Bache's (1978) second modification zone
MOD-III	Adjective from Bache's (1978) third modification zone
N	Noun
NOM	Nominative case
NP	Noun phrase
NTMC	National Trust Micro-Corpus
PAST	Past tense verb
PC	Possessive concord
PL	Plural
PNP	Poly-adjectival nominal phrase

POS	Possessor
POSS	Possessive Particle
PP	Prepositional phrase
PREMOD	Pre-modification
PREP	Preposition
PRES	Present tense verb
PROG	Progressive/continuous aspect
PSC	Pretoria Sepedi Corpus
PST	Past tense
QPX	Qualificative particle (X indicates noun class)
RDP	Reduplication
REL	Relative marker
RELN	Relative noun
REMOTE	Remote aspect
REPD	Reported verb form
S	Subject
SC	Subject concord
SG	Singular
TOP	Topic
VB	Verb
VREL	Verbal relative
WALS	World Atlas of Language Structures
Ø	Zero marker
1PS	First person singular
3PS	Third person singular

Declaration:

I hereby declare that this thesis is all my own work and has not been submitted at any other institution or for any other academic award.

Paul Flanagan, 2014

ABSTRACT

Abstract of doctoral thesis:

A CROSS-LINGUISTIC INVESTIGATION OF THE ORDER OF ATTRIBUTIVE ADJECTIVES

Paul J. Flanagan, March 2014

This thesis examines the order in which attributive adjectives are placed when appearing in a string modifying the same head noun. Noun phrases featuring more than one adjective are examined in six languages, all of which have modification patterns which exhibit distinctive patterns of syntax and morphology. Northern Sotho is a Bantu language with postnominal adjectives, agglutinative morphology and qualificative particles which link modifier and head; Welsh also has predominantly postnominal adjectives but less complex adjectival morphology. Polish and English adjectives typically appear before the noun, and the order in which they are sequenced is compared with Chinese, in which all modification appears before the noun, including relative clauses. I also examine the syntax of adjective strings in Tagalog, an Austronesian language in which adjectives can appear both before and after the noun, and in which the nature of lexical categories is particularly complex. The universality of the adjective class has generated considerable debate among linguists, with much discussion in the last decade with regard to whether adjectives constitute a independent lexical category across all languages. Chinese, Tagalog and Northern Sotho are all languages in which the nature of the adjectival category has been questioned, and this comparative analysis of a syntactic phenomenon which is an essential characteristic of adjectives adds a new dimension to the debate surrounding the universality of the adjective class. Based on a combination of corpus data and field-based methods, I analyse the patterns which appear across the languages in my sample. I evaluate the various explanations of the different factors which affect the order in which English adjectives are placed ahead of a noun, and relate my findings to equivalent structures in each of my focus languages, before proposing some conventions which appear to be consistent across a representative sample of languages.

KEYWORDS: adjective; order; cross-linguistic; universal; semantic; function; modifier; noun phrase

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1. Introduction

1.0 Structure of this Chapter

In this chapter, I provide a brief outline of the phenomenon of adjective ordering as investigated in this thesis. This is intended as a short introduction to the project, with critical concepts explored only briefly, and later expanded upon in the succeeding chapters. I begin by providing a short introduction to the phenomenon I am investigating in 1.1, and contextualise my study by introducing some key concepts and theorists in 1.2. I then discuss my choice of focus languages in 1.3, before giving an overview of the structure of the thesis in 1.4.

1.1 Poly-adjectival Nominal Phrases (PNPs)

This project concerns the ordering among modifiers in poly-adjectival nominal phrases (PNP). This term was coined by Bache (1978) to refer to any noun phrase which contains more than one modifier. Bache's work is discussed in more detail in 1.2, and I follow him in using the term PNP to refer to a noun which is preceded by a string of two or more modifiers. This includes not only adjectives, but noun modifiers and specifying adjectives such as *other* or *former* which typically occupy the post-determiner slot within a noun phrase. The nature and behaviour of such adjectives are discussed at length in Chapters 2 and 4; in this section I will simply give some examples from popular culture of PNPs which exhibit the kind of orders which are investigated in this project.

In many PNPs in English, there is a preferred order for the adjectives within a modification string:

1. Clifford the Big Red Dog
2. ?Clifford the Red Big Dog

   (The title of a children's book series by Norman Bridwell, first published in 1963)

In the above examples, the order of the adjectives *big* and *red* is relatively fixed, with a reversal sounding ungrammatical to an English speaker, without a particularly marked stress pattern. If a speaker were looking to distinguish between a group of big dogs all of different colours, perhaps this marked order would be selected but in unmarked stress, there is a clearly normative ordering and an alternative which would be considered to sound unnatural. On the *BBC News at One* (29/9/2013), one story involved a reference to 'a Kenyan radical cleric'. The more common order for this phrase would be *a radical Kenyan cleric*, with a descriptive adjective preceding an adjective of nationality (Quirk et al 1985, Bache 1978, Dixon 1982 and others; see *4.2* for more on this). By choosing to place the adjectives in a marked order, there is an implicit suggestion that *radical cleric* is a common collocation and the usually descriptive adjective *radical* takes on a more classifying function (see

Warren 1984, and *4.3*). Due to this marked ordering, the fact that this cleric is from Kenya is presented as being more incidental and less intrinsic to his character. I use the term *collocation* here following McGregor's (2009: 97) definition as of 'habitual combinations of words'. In this example, the phrase *radical cleric* is a collocation which has a particular interpretation and has been used regularly by the British press to describe such individuals as Abu Hamza, who present a threat to the state based on extremist views often considered to be justified by religion. In this document, I use the term collocation regularly to refer to words which are placed immediately adjacent to one another, often (but not always) with a particular meaning expressed by this combination of words.

Many PNPs in English have a normative, unmarked order, but there are also strings for which variable orders are possible:

3. Your untouched, unsoiled, wondrous eyes
   'The Hand that Rocks the Cradle'(1984) by *The Smiths*

4. My beautiful dark twisted fantasy
   Studio album by *Kanye West*, 2010

5. Neurotic psychotic pig-headed politicians
   'Gimme Some Truth' (1971) by *John Lennon*

In each of these examples of PNPs from popular music, the ordering of adjectives is less fixed, with the artist in each case able to foreground whichever notion he feels most appropriate. Brown and Yule (1989: 135) note that authors can choose to foreground or 'thematize' the most important element of an utterance by placing it furthest left in the phrase. In (3), Morrissey (1984) chooses to make *untouched* the most important quality of the *eyes* he describes, while in (4), West (2010) chooses to focus upon the *beautiful* nature of the *fantasy* in his album title. In (5), Lennon (1971) considers *neurotic* to be the most relevant adjective in this string of negative characteristics which typifies the polemic and aggression of this classic protest song.

Feist (2012: 17) stresses the difference between 'stacked modification' (Scott 2002, among others) and 'submodification', in which phrase elements may function separately to modify a head, or may combine to form larger units which in turn modify the head. Feist's (*Ibid*) example of one phrase which could be considered ambiguous in these terms is 'dark red hair'. If this string is considered to feature stacked modification, the modifiers are seen to operate independently to suggest that the hair is both dark and red. If this is interpreted as submodification, the hair is modified by the collocation *dark red*, with *dark* having an adverbial function and modifying the adjective *red* rather than the head noun *hair.*

The phrases considered in this section so far all feature examples of stacked modification in which adjectives modify a head separately. The following PNP from ITV's *The Chase* features a modification string which includes adjectives exhibiting patterns both of submodification and stacked modification:

6. The second oldest underground electric train network
   The Chase, ITV (6/11/2103)

In this example, the modifiers *second* and *oldest,* and *electric* and *train* form phrases which modify the head noun *network* in co-ordination with the adjective *underground.* In this sense, there is submodification within the ordinal superlative phrase *second oldest* and the noun phrase *electric train* and stacked modification of the head by each of these elements in coordination with *underground*. The relationship between *English* and *thatch* in the (7), from BBC's *Homes Under the Hammer* is ambiguous in the same way as in Feist's earlier example, while the adjective *typical* seems to refer to the following three adjectives rather than directly modifying the head. This is a cottage which is typically English because it is quintessential and has a thatch roof.

7. A typical quintessential English thatch cottage
   Homes Under the Hammer, BBC (30/9/13)

The complex semantic relationships between these modifiers contribute towards the order in which the adjectives are placed, and this is the syntactic feature investigated in this project. Attempts to explain and predict the order in PNPs are examined and compared for English before these patterns are compared in five other languages. The adjective category across different languages is a subject which continues to generate lively debate among linguists and is explored in more detail in Chapter 2. The languages chosen for this study have patterns of nominal modification which exhibit considerable variation in morphological and syntactic structure, as discussed in more detail in *1.4*.

1.2 **Key Concepts and Theorists**

Dixon and Aikhenvald (2006) and Baker (2003) produced major works which argued against the suggestion in traditional linguistics that not all languages have a distinct word class 'adjective'. Languages including Chinese (Li and Thompson 1981), Tagalog (Gil 1991), Northern Sotho (Van Wyk 1979) and Korean (Yu 1998) have all been suggested to have no such grammatical category. There are, however, strong arguments against this claim in each of these languages, with Sohn (2006, 1999) particularly vociferous about the existence of a large, distinct adjective class in Korean. Brief discussions of this debate in Chinese and Tagalog are offered in Chapter 9, while the adjective class in Northern Sotho is examined, analysed and described in detail in Chapters 6 and 7. The universality

debate is presented in more detail in Chapter 2 and is relevant and pervasive throughout this project.

There have been countless attempts to account for the ordering restrictions in English PNPs, with many theorists focussing on the semantic content of adjectives (Dixon 1982, Scott 2002 among others). The work of Bache (1978) is particularly important to this project, as he examined PNPs focussing not only on semantic-based ordering, but also on the function of each adjective. I use the term *function* to refer to the use of an adjective to specify, classify or simply describe a noun (after Bache, 1978).

Studying patterns in a corpus-based study of books and newspapers, Bache (1978: 26) suggested that all modification in English noun phrases could be separated into three 'modificational zones'. These zones feature adjectives which specify (Mod-I), characterize (Mod-II) and classify (Mod-III), and are identified by Bache based on their semantic properties and syntactic behaviour. In the following example in (8), Bache considers *good* and *sound* to be Mod-II adjectives in that they describe or characterize the head, while *usual* has a more determinative function and *English* classifies the head rather than merely describing it.

8.

The	*usual*	*good, sound*	*English*	*stock*
DET	Mod-I	Mod-II	Mod-III	N

(Bache 1978: 28)

The ordering among adjectives in PNPs has been considered on a cross-linguistic level only occasionally. Sproat and Shih (1991) compared English PNPs with Chinese and Svenonius (2008) provides some interesting cross-linguistic comparison. Perhaps the most notable work of this kind has been conducted by Cinque (2004, 2009, 2010), who compared the structure of complex modification in English with equivalent structures in Romance languages, which have predominantly postposed adjectives. Cinque found that many PNPs exhibited orders which were the mirror image of the orders in their English translations, and also proposed explanations for the ordering of adjectives based on head movement and N-raising analyses. Cinque's ideas are expanded upon in Chapter 2 and addressed again in Chapter 8, in which analyses of postnominal modification strings in Welsh provide evidence which contradicts some of his suggestions.

The analysis of the syntactic structure of complex modification strings undoubtedly falls within a framework of Universal Grammar, perhaps the most influential theory proposed by Chomsky (1965 and others). Chomsky (1965: 6) refers to 'the widely held belief that there is a "natural order of

thoughts" that is mirrored by the order of words' and suggests that there are programmed patterns of cognition which lead to common characteristics across all human languages. The notion that language is a genetic, in-built function of the human brain is the foundation of comparative linguistics, with innumerable studies undertaken of how the syntax and grammar of languages vary in the structures used to express human thought.

Greenberg (1966, 1978, among others) did considerable work towards the genetic classification of languages, and built on Chomsky's work by proposing a number of linguistic universals; observations of structures and patterns which appeared to be common to all languages (based on a representative sample of around 200 languages). Greenberg's universals 17 to 22 all include observations on patterns of nominal syntax and how these relate to adjective placement. The work in this thesis builds upon the spirit of comparative syntactic investigation inspired by Greenberg's work, as well as similar work in the area of linguistic typology by theorists such as Dryer et al (2013) Croft (1981) Comrie (1990) and Dixon (2009-10).

1.3 **Focus Languages**

Much of the work done on the adjective class concerns the variability of the lexical category in terms of morphology and syntax. Perhaps the most commonly studied area is that of the order of adjective and noun (Dryer 1992, 2013 among others). For this reason, the five languages chosen for this study (in addition to English) are selected as they exhibit as much variation as possible from the morphosyntactic structure of English. These five languages are Polish (a Slavic language), Tagalog (an Austronesian language), Chinese (a Sino-Tibetan language), Welsh (a Celtic language) and Northern Sotho (a Bantu language). As well as representing a broad typological range, all these languages are from different language families and hence offer a wide sample in terms of language genealogy. In each respective chapter, I provide a morphological and syntactic sketch of the adjective class in each of my focus languages as an illustration of this variety, as it is fundamental in my analysis of modification patterns in languages which are mutually distinctive.

While English adjectives appear almost exclusively before the noun (with the exception of a few French calques and marked stylistic usages), adjectives in Northern Sotho and Welsh are predominantly postnominal. In Welsh, as in many languages with postnominal adjectives (Greenberg 1966), there is a small subset of adjectives which are commonly preposed, while in Northern Sotho all modification follows the head. The Polish adjective class is in many ways a mirror-image of that of Welsh, with most adjectives appearing prenominally and a small number of adjectives coming after the noun. The motivations for postposition in Polish are semantic rather than lexical (see Chapter 9

for more on this), but syntactically this still represents some similarity to the pattern in Welsh. In Chinese, the order is the opposite of that in Northern Sotho, with all modification coming before the noun, while in Tagalog both prenominal and postnominal modification are possible and common.

This syntactic variation is also complemented by morphological variation. Adjectives in Northern Sotho take a concordial prefix which reflects the noun class of the modified head, and are separated from the noun they modify by a monosyllabic particle, the function of which is debated by theorists (see Chapter 6). In Chinese, adjectives can function as intransitive predicates and are often followed by a monosyllabic particle *de*, which as in Northern Sotho, has a function which is contested by theorists (see Chapter 9). In Tagalog, adjectives are combined with nouns through the use of the ligatures *na* and *–ng*, depending upon the phonology of their final syllable, while in Polish, adjectives take case, number and gender inflections.

This variation in syntax and morphology allows for considerable scope in studying PNP structure in phrases such as *the big black dog* in English (examples based on data from Chapters 7-9):

9. *Welsh:* *Ci mawr du*
   Ndog ADJbig ADJblack

10. *Northern Sotho*: *Mpša ye kgolo ye ntsho*
    Ndog QP ADJbig QP ADJblack

11. *Chinese:* *Dà hēi gǒu*
    ADJbig ADJblack Ndog

12. *Polish:* *Duży czarny pies*
    ADJbig ADJblack Ndog

13. *Tagalog:* *Malaking itim na aso*
    ADJbigLIG ADJblack LIG Ndog

In these examples alone it is clear that, although there is considerable variation in the grammatical structure of the phrases, there is a normative order across all five languages, in which the size adjective *big* precedes the colour term *black*. Although patterns such as this do not exist across all combinations of semantic subclasses of adjectives, these languages are chosen so that any observations of common orders can be generalised to a larger sample of languages. Based on the broad typological and genetic range of languages, any universal assumptions made can be said to be representative for a much larger number of languages.

1.4 **Structure of Thesis**

The thesis is divided into ten chapters including this introduction. In Chapter 2, I provide some background on the adjective class, discussing arguments for and against its status as a universal lexical category, the morpho-syntactic variation exhibited across different languages, and some approaches to the ordering of adjectives in cross-linguistic perspective. In Chapter 3, I outline the research design of the project, and justify the decisions I have made relating to methodology, ethics and sampling.. In Chapters 4 and 5, I study the adjective class in English, with background work presented in the former and data from my own original fieldwork presented and analysed in the latter. Chapters 6 and 7 follow a similar structure, with the nature of the adjective class in the language discussed in Chapter 6 before analysing data from corpus and field-based sources in Chapter 7. In Chapter 8, I discuss adjective order in Welsh, before in Chapter 9 presenting a comparison of adjective ordering in Polish, Chinese and Tagalog. In Chapter 10, I summarise my findings and present my conclusions.

2. The Adjective Class: Characteristics and Variation

2.0 Structure of this Chapter

In this chapter, I consider and discuss the nature of the lexical category 'adjective', and give a summary of the work done on the class in terms of its identification, properties and cross-linguistic variation. In 2.1, I offer some typical definitions of what constitutes an adjective and present some of the most basic properties of the class, before discussing whether adjectives constitute a universal category across languages in 2.2. In 2.3, I present an overview of work that has been done in comparing adjective classes in different language families before considering how the syntax of polyadjectival nominal phrases can be analysed in 2.4. In 2.5 I provide some closing, summarising remarks on the adjective as a universal lexical category.

2.1 Identifying the Adjective Class

The science of linguistics (and more specifically syntax) is often concerned with dividing language into lexical categories such as nouns, verbs, and adjectives in order to study how these elements combine to form clauses and sentences. While nouns and verbs have been studied broadly and extensively, the adjective class has received less attention (Cabredo Hoffherr 2010:1; McNally & Kennedy 2008: 1). In the past decade, the amount of work published on adjectives has increased, as debate as to the universal nature of the adjective class has become more widespread following major publications by Baker (2003a) and Dixon and Aikhenvald (2005). Studies in this area include works by Beck (2002), Teodorescu (2006), Truswell (2009), Cinque (2010), and Hansen (2011). The universality debate is discussed in 3.2, while in this section I focus upon traditional definitions of the adjective class (primarily in English, with cross-linguistic variation covered in more detail in 3.3), and the semantic, morphological and syntactic properties usually associated with the category.

Tucker (1998: 7) claims that the study of adjectives has been neglected by grammarians, in favour of the noun and the verb. He says that adjectives 'relate to "qualities" and "attributes" of the "things" which participate in the "events" and "processes" which language serves to represent', suggesting that it is on the 'things' (nouns) and the 'events' (verbs) which linguists have focussed most of their attention. He considers adjectives to possess the 'structural and functional complexity that has been typically associated with verbs and nouns' (1998: 8) and associates the word class with what he defines as the 'somewhat more overtly semantic term […] Quality'. Although nouns and verbs can be broadly (though not necessarily exhaustively) defined as 'things' and 'events', it is often difficult to define exactly what an adjective does.

Traditional definitions of adjectives, such as Tucker's usually involve some reference to 'description', 'properties' or 'qualities'. Todd (1987: 55) refers to an adjective as 'a descriptive word that qualifies and describes nouns', while Thorne (2012: 13) talks about adjectives in traditional grammar as 'describing words' which 'give us extra information about nouns by modifying or changing our frame of reference'. Crystal (2004: 166) defines the category as '[w]ords which express some feature or quality of a noun', while Leech et al (1982: 47) suggest that adjectives 'typically denote some quality or property of a noun' and McGregor (2009: 83) notes that adjectives 'indicate qualities or properties of things'. Bloomfield (1933: 202) uses the term 'descriptive adjectives' to refer only to the subclass of central, mono-morphemic adjectives, rather than to the category as a whole, and as such suggests that adjectives do more than simply describe nouns.

Trask (1997: 6) goes a little further than these definitions and notes that 'the meaning of an adjective is most often a quality, but there are lots of exceptions […] it is very difficult to guess what word class a particular word belongs to merely by looking at its meaning'. Jespersen (1961: 4) divides parts of speech into 'principals', 'adjuncts' and 'subjuncts', with adjectives defined as 'words standing habitually as adjuncts'. As such, he considers adjectives as logically subordinated to nouns (or substantives) in a similar way to determiners. He also notes that 'the distinction between different parts of speech always depends on formal criteria' (1961: 7), while noting that such criteria are not always as clear in Modern English as they previously were.

Quirk et al (1985: 402) do not provide a particular semantic-based definition and identify an adjective in terms of its behaviour, suggesting 'we cannot usually tell whether a word is an adjective by looking at it in isolation because the form of a word does not necessarily indicate its syntactic function'. As well as outlining certain suffixes commonly associated with adjectives (*-ical, -able* among others), they suggest four basic criteria 'commonly considered to be characteristic of adjectives' (*ibid*). These are morphosyntactic in nature and involve: intensification by *very*; taking suffixes to indicate comparison; the ability to appear in attributive function (modifying a noun); and in predicative function (as complement in a predicate). Strang (1969: 133) considers these final two properties to be 'the criterion of adjectives in the most central sense that they have these functions and not others', and suggests the other two criteria less intrinsic as many adjectives are not gradable (see Chapter 4 for a more detailed discussion of this).

Quirk et al (1985: 404) suggest that adjectives satisfying all four criteria are known as 'central adjectives' while adjectives which have only some of these properties are termed 'peripheral

adjectives'. The adjective *utter* is very much a peripheral adjective as it only satisfies one of the four criteria, while *soft* is a central adjective as it meets all four, as exemplified below:

	Soft	*Utter*
Attributive	The *soft* pillow	The *utter* devastation
Predicative	The pillow was *soft*	*The devastation was *utter*
Intensification	The *very soft* pillow	*The *very utter* devastation
Comparison	The *softer* pillow	*The *more utter/utterer* devastation
Type	Central	Peripheral

Table 2.1: Criteria for Central and Peripheral Adjectives

The semantic relationship between adjective and noun is often described as being 'intersective' or 'non-intersective', with the former suggesting 'logical combinations' of items which possess the quality suggested by both the noun and the adjective (Kamp and Partee 1995: 130). Kamp and Partee's example of an intersective adjective is in the noun phrase 'the striped apple'. This is a substantive which embodies both qualities equally, and can be seen to represent the semantic area which intersects 'things which are striped' and 'things which are apples'. Some adjectives, such as *former*, are by their very nature non-intersective, as the use of this adjective suggests that the modified noun is in fact not represented by the substantive used. In the noun phrase 'the former president', the person being described is not a president at all. Cinque's (2010: 9) example 'Olga is a beautiful dancer' is considered 'systematically ambiguous' as it is unclear without context whether Olga is both beautiful and a dancer, or whether a more adverbial (non-intersective) reading is implied, suggesting that it is Olga's dancing which is beautiful. Consider the following diagrams:

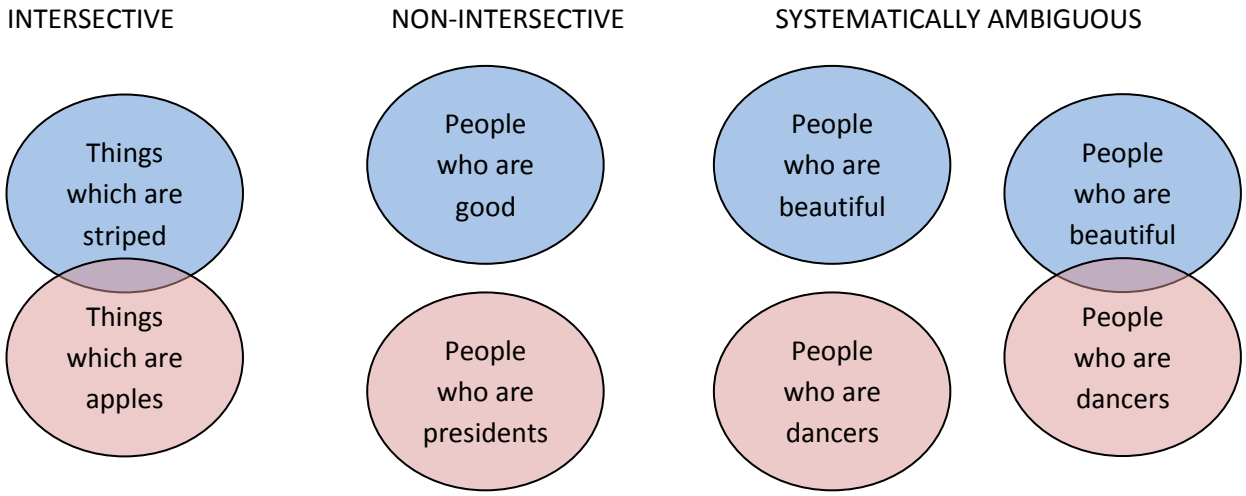


Figure 2.1: Intersective and Non-intersective Adjectives

In each of the outermost diagrams, the constructed grammatical meaning of the noun phrase can be seen to represent the section at which the two circles intersect, which in the innermost diagrams, the adjective is non-intersective as there is no section at which the two semantic areas overlap, which can be seen to represent the meaning of the noun phrase as a whole.

The nature of the adjective class is best described to its fullest extent by examining semantic, syntactic and morphological properties. These properties are investigated in English in more detail in Chapter 4. By finding characteristics which are distinctive to the most central members of the adjective class such as intensification and comparison, it is easier to define the class on a more specific and accurate level. Then, by looking at the common morphological and syntactic properties of adjectives in a particular language, it is possible to identify what lexical items can be considered part of the category for that language.

Haspelmath (2012: 109) suggests that 'cross-linguistic categories do not exist' and suggests that adjectives (and other) classes are best defined on a 'language particular' level. This is a view which echoes Croft (2001) and is the approach I follow within this thesis. Although there are semantic, morphological and syntactic features which typify the adjective class on a more abstract, universal level, the most useful definition of 'adjective' is one which recognises the particular characteristics of the class in the language being studied. Thus, for the purpose of this study, my definition of the adjective is any word which typically modifies a noun and often contains terms which comment on the colour, size and general nature of a noun.

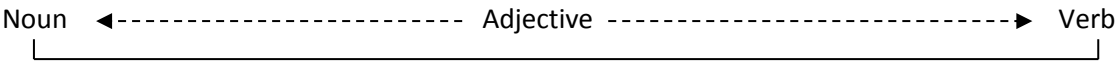
2.2 **The Universality of the Adjectival Category**

McGregor (2009: 83) notes that lexical categories were traditionally 'defined intuitively, in terms of the type of meaning expressed'. He goes on, however, to say that 'in modern linguistics, grammatical behaviour is the primary consideration'. He suggests that the criteria for distinguishing between these categories varies from one language to another and that in some languages, it is very difficult to differentiate between them. Differences in morphology, syntax and semantics can be used to determine word class boundaries, but opinion remains divided as to whether adjectives constitute a universal word class, or whether, as McGregor suggests (2009: 84), 'a fair number of languages do not recognize a distinct class of adjectives'.

Baker (2003a) considers the problem of dividing words up into distinctive classes of noun, adjective and verb. He claims that 'generative linguistics has been preoccupied with explaining the similarities

that hold across lexical categories and has had little to say about their differences' (2003a: 3). Chafe (2012: 1) notes that the adjective class is more difficult to define than those of nouns and verbs, suggesting 'whereas nouns and verbs typically belong to large and potentially open word classes with a strong claim on universality, adjectives show markedly different properties from one language to another'. It can be broadly accepted that the adjective class is a problematic and debatable lexical category; whilst nouns and verbs both have inherent properties which mark them out as distinctive and universal word classes, the adjective class is more elusive and variable.

Dixon (1982) suggests that adjectives take on different characteristics in different languages; in some languages they are a lot like nouns, while in others they are more like verbs. In some languages they are different from either of the two main lexical categories, while sometimes they have properties in common with both. Bhat (1994: 1) suggests that, in terms of adjectives, 'languages form a gradation, with some showing several differentiating characteristics between adjectives and other categories and others showing fewer such characteristics'. While nouns and verbs both exhibit considerable formal and behavioural variation between languages, it is reasonable to suggest that they represent opposing ends of a categorical continuum, with the adjective coming variably at different points along this theoretical continuum, depending upon the language:



In English, the adjective class is easy to distinguish from the noun and verb categories. Whilst nouns can function as pre-modifiers in noun phrases, only adjectives take comparative and superlative forms or degree modifiers when functioning as such. Whilst noun phrases can also function as complements, this same distinction can be made with regard to the behaviour of the adjective. Adjectives in English constitute a very separate word class to nouns, characterised by being able to function as a modifier or a sole complement, taking degree modifiers and (often) having graded forms. They do not inflect for gender, number or case and cannot really be said to occupy the same linguistic space, semantically or morphologically as the noun class.

Similarly, adjectives constitute a very different lexical category from the English verb. English verbs inflect for person, number and tense, albeit with much less complex morphology than most other Indo-European languages, while adjectives do not take any of these inflections. Verbs can function alone as a predicate, whereas adjectives cannot do this without the presence of a stative verb form. Although verbs can be modified to indicate similar properties of intensification, comparison and

superlation possible with adjectives, the morphosyntactic properties of such constructions are quite different. One might compare *he runs more* with *he is more athletic*; in the former example, *more* is typically placed after the verb as an adjunct, while in the latter, it functions within a premodification string as an intensifier. As well as a syntactic difference, there is also semantic contrast here, with each phrase denoting qualities which are more verbal or more adjectival respectively.

Dixon (2006: 11) suggests that 'in some languages, a modifying adjective within an NP may take some or all of the same morphological marking as a noun', just as it did in Old English. Hajek (2006: 357) echoes this, noting that 'in a number of languages, with respect to general morphological processes, the attributive adjective is treated in a manner similar to nouns'. The morphological processes to which the two authors refer are inflections added to indicate gender, number and case, all typically associated with the lexical category of nouns. Number-marking is also commonplace in verbal morphology however, and the context in which adjectives are marked for these properties typically differs from that of nouns.

Jespersen (1961: 5) notes that 'in some languages, such as Finnish, there is no formal distinction between substantives [nouns] and adjectives, which thus form together the one part of speech called "nouns"'. Both adjectives and nouns inflect for case and number, and there is no grammatical gender. This is also similar in Latin, in which the same inflections are used on adjectives as on nouns, although the declension/gender system in Latin allows nouns and adjectives to be distinguished based on their concordial inflections. While this distinction is not possible in Finnish due to a lack of grammatical gender, only nouns take possessive suffixes and only adjectives can function as head of an adjective phrase (such as *hyvä syödä* 'good to eat'), inflect for comparison and take intensifiers such as *erittäin* 'extremely' (Karlsson 2008: 101).

McGregor (2009: 84) suggests that one of the linguistic areas in which many languages do not possess an adjective class is Australia, with stative verbs instead used to denote the same property, a structure which is developed upon in *3.3*. Bhat (1994: 3), however, suggests that 'when adjectives are used as predicates (i.e. in the function of verbs) or as arguments, they fail to show several of their differentiating characteristics'. Another theorist who disagrees with McGregor's suggestion is Dixon, who has done considerable work with Australian languages, as well as in the area of adjectives. In 1982, Dixon makes the suggestion that 'not all languages have the major word class adjective'(1982: 2), a claim that he revises three decades on when he proposes that 'a distinct word class 'adjective' can be recognized for every human language [and] there are always some grammatical criteria- sometimes rather subtle- for distinguishing the adjective class from other word

classes' (2006: 1). Hajek (2006: 356) supports this suggestion, noting that 'all languages allow adjectival modification of nouns in noun phrases, but there are very substantial cross-linguistic differences in observed patterns of behaviour'. While Dixon's proposal is supported by evidence presented in his edited volume from 13 languages in which the existence of an independent adjective class has been debated, there remain languages in which such classificatory claims have yet to be challenged. One such language is Northern Sotho, which is discussed in *Chapters 6 and 7.*

Dryer (2013: 1) disagrees with this, however, and suggests that 'in some languages, like English, adjectives form a distinct word class. In other languages, however, adjectives do not form a distinct word class and are [replaced by] verbs or nouns'. Languages which are often said to have no adjective class include Guarani (Nordhoff 2006), Otomi (Palancar 2006), Sierra-Totonac (McQuown 1990) Misantla-Totonac (MacKay 1999) Cherokee (King 1975; Cook 1979) Mandarin Chinese (Li & Thompson 1981; McGregor 2009: 85), Tagalog (Gil 1992), and Northern Sotho (Van Wyk 1969). Many supposedly 'adjective deficient languages' (Dixon 1982: 3) have since been investigated, with counterarguments to these claims, including Beck (2000, for Totonac), Lindsay and Scancarelli (1985, for Cherokee), while in Mandarin Chinese, adjectives are now generally considered to constitute an independent word class (see among others Xu 1988, Wen et al 2000, Po-Ching and Rimmington 2004 and Liu 2013) and the lexical category debate is considerably productive for Tagalog (Gil 1992 & 1995; Kroeger 1993; De Guzman 1996; Koch & Matthewson 2006; Himmelmann 2008).

Debate on the nature of lexical categories often concerns the fact that 'exotic' languages (Hansen 2011: 8), that is, those which are not Indo-European, were often first described by linguists whose experience and background was predominantly Indo-European. Gil (1995: 68) describes the use of Indo-European word classes and linguistic terminology to describe languages from other, often very typologically different, language families (such as those above) as 'an exercise in Eurocentricity, involving the unwarranted imposition of categories and structures that are simply irrelevant [to the described language]'. A decade later, Gil (2001: 104) repeats this thought, suggesting that it is the responsibility of descriptive linguists to confront 'Eurocentric linguistic traditions which either implicitly presuppose or else explicitly assert that certain grammatical categories are universal'.

Dixon (2006: 13), however, suggests that Eurocentrism is to a large extent responsible for what he deems unjustified claims that many non-European languages do not possess an adjective class. He suggests that, as a consequence of Indo-european traditions in linguistics, 'there has […] arisen the idea that if a language has an adjective class, then it should be similar to the adjective class in European language' (*ibid*). Dixon goes on to suggest that 'this has undoubtedly played a role in the

failure to recognise an adjective class for languages in which adjectives show a rather different profile'. He suggests that, while linguists are happy to recognise adjective classes in languages such as Latin and Finnish, in which adjectives share a great deal of properties with nouns, in languages in which adjective and verbs share many properties, this has led to adjectives to be considered a subclass of verbs. The most high profile language of this kind is Chinese, in which the belief that adjectives are a kind of stative verb is considered by Dixon to lack insight (*ibid*).

Baker (2003a: 190) suggests a different way of recognising the adjectival class. He refers to adjectives, rather than being part of a noun-verb continuum, as being 'neither nouns nor verbs' and not 'a foil for other categories' in the way that Jespersen suggests. Baker refers to Chomsky's (1970) theory on the classification of words, and labels adjectives as (-N, -V), differentiating them completely from both word classes. He claims that 'adjectives can be used as modifiers in many languages, and they can be compared, but I argue that these are derived properties of the adjective, not basic defining ones' (Baker 2003a: 191).

Sasse (1993: 196-201) suggests that word classes may be distinguished based on four main criteria: semantic, pragmatic, lexical-syntactic and formal (morphological). Bisang (2011: 16) suggests that adjectives, like nouns and verbs are universal categories, acknowledging the existence of 'typological prototypes' based on Sasse's four criteria. Croft (2000: 88) also agrees with this proposition, asserting that the adjective class can arguably be recognised as universal based even on semantic properties alone.

Baker (2003a: 191) proposes three 'syntactic environments in which only an adjective can appear', suggesting that these properties distinguish adjectives (again, in English at least) from nouns and verbs. These are as a direct attributive modifier of nouns, complement of degree heads such as *so*, *as* and *too*, and 'resultative secondary predicates' such as in 'they beat the metal *flat*', which might more regularly be referred to in English as an object complement (Quirk et al 1985: 720). The first of these is naturally problematic as nouns can also function as modifiers in phrases such as 'the world geography teacher', but Baker would not consider this to be an example of what he terms 'direct attributive' modification (2003a: 191). I will return to this concept when discussing Bache's typology of English premodifying adjectives (Chapter 4).

The argument, however, that the exclusivity of these syntactic environments to adjectives provides evidence that adjectives have their own distinctive properties from nouns and verbs, is very sound. Baker explains his suggestion thus (2003a: 191):

> [there are] structures in which the theta-role assigning property of verbs and the index-bearing property of nouns causes them (independently) to run afoul of general conditions. When this is the case, adjectives emerge as the only category that can be used, not because of any positive feature that the adjective has, but by default, because nothing disqualifies them.

Baker firmly believes that it is misguided to think of adjectives as an appendix to the more widely-recognised universal classes of the noun and the verb. He criticises attempts to prescribe the primacy of the attributive function (Croft 1991) or the predicative function (Thompson 1988, Hengeveld 1992) and suggests that it is best to 'derive the possibility of noun modification (for most adjectives) from a more general theory of what adjectives are' (*ibid*: 195).

The universality or otherwise of the adjective class is difficult to categorically determine, as any definitive conclusion has to be based on one individual theory as to what constitutes an independent lexical category. While Dixon (2006), Hajek (2006) and Baker's (2003) arguments that the adjective class can be considered a universal category based on often subtle differences in morphological and syntactic structure, it is understandable that in some languages such minutiae are often considered insufficient to constitute a separate and distinctive word class. The nature of debated adjective classes in Tagalog, Northern Sotho and Chinese is considered in Chapters 6 and 9 of this thesis, and the stance I take within the scope of this project is that of Dixon and Baker, that adjectives may be considered an independent class based on morphological and/or syntactic differences.

2.3 **Cross-linguistic Variation in Property Concepts**

The adjectival category is one which exhibits considerable variation from one language to another, in terms of the number of adjectives, their morphosyntactic behaviour and the way in which they combine with modified heads and other adjectives in noun phrases. While in Indo-European languages, adjectives constitute a vast, open, productive class, Dixon (1982: 3) notes that some languages have only 'a small non-productive [closed] minor class that can be called adjective'. A large number of languages which only have a very small class of adjectives are found in Africa, with Niger-Congo languages commonly having very few adjectives. Dixon (*Ibid*) notes that Igbo only has eight members making up four 'antonym pairs', following the original example by Welmers and Welmers (1969):

Semantic Field	Positive		Negative	
Dimension	*úkwú*	large	*ńtà*	small
Age	*óhú'rú*	new	*ócyê*	old
Value	*ómá*	good	*ójó'ó*	bad
Colour	*ócá*	light-coloured (white)	*ójí'í*	dark-coloured (black)

Table 2.2: Antonymic Adjectives in Igbo

There are, however, languages with even smaller adjective classes than Igbo. Ewe has just seven members (Pasch 1995), Babole has two pairs of antonyms, *-be* 'bad'/ *-lámù* 'good' and *–soni* 'small'/ *ngàtà* 'big' (Leitch 2003), while Jaad also has just four, all borrowed from French (Meyer 2001). According to Segerer (2008), there are African languages with as few as two adjectives, while other languages have much bigger classes such as Dagbani (Olawsky 2004) which has 101. Segerer's (2008: 4) extensive study of African adjective classes omits Venda due to a difficulty in recognising an adjective class as 'none of the sources for Venda mention any criteria for establishing the word-class of adjectives'. Northern Sotho, which is closely related to Venda, exhibits very similar problems, which are investigated and challenged in Chapter 6.

Perhaps the most common property of adjectives which has been studied on a cross-linguistic level is that of the ordering of adjective and noun. Greenberg (1963: 75) notes that 'certain languages tend consistently to put modifying or limiting elements before those modified or limited, while others just as consistently to do the opposite'. Dryer (2014: 1) adds that 'in some languages, both orders of adjective and noun occur. In some of these, an argument can be given that one of the two orders is dominant'. Dryer also states that in some languages, either order is possible, with no dominant order. The following four noun phrases exemplify languages from each of these possible types (N-ADJ, ADJ-N, both with dominant order, both with no dominant order):

ADJ-N: Mising, Tibeto Burman (Prasad 1991: 69)

14. *azɔ́në dɔ́luŋ*
    small village
    ADJ N
    'a small village'

N-ADJ: Alamblak, Papuan (Foley 1986: 82)

15. *til-e* *nama-e* *sum-e*
    Dog-MASC white-MASC big-MASC
    N ADJ ADJ
    'A big white dog'

Both Orders: Dominant ADJ-N: Hausa (Smirnova 1982: 28/38)

16. *babban gida* *gida mai-kyau*
    big-CSM house house beautiful
    ADJ N N ADJ
    'big house' 'beautiful house'

Both Orders: No Dominant Order: Tagalog (Blake 1925: 103)

17. *mabuting tao* *taong mabuti*
    good-LIG man man-LIG good
    ADJ N N ADJ
    'a good man'

Many languages said to possess one clear order of adjective and noun also have a small subclass of adjectives which appear in the opposite position. This is true of Slavonic languages such as Russian, in which adjectives are typically prenominal but with some adjectives which often appear postnominally, and in Romance languages such as Portuguese which have the reverse pattern. While both languages have adjectives which almost exclusively appear in the reverse order to the dominant pattern (as in Welsh- see Chapter 8), using the reverse order can also add emphasis, change meaning, or suggest a more figurative interpretation (Cinque 2010: 76) such as in the following examples:

18. *техническое оснащéние, конéчно, дéло вáжное*
    (texhničeskoye osnaščeniye, konečno, delo važnoye)
    technical equipment, of course, matter important
    ADJ N ADV N ADJ
    'technical equipment is, of course, an important matter' (Russian- Wade 1998: 538)

19. *um* *velho* *amigo*
an old friend (of many years)
DET ADJ N
'an old friend' (Portuguese- Hutchinson & Lloyd 2000: 33)

Bhat (1994: 11) notes that in English, adjectives 'are quite different from nouns and verbs'. He points out that each word class has grammatical properties which are exclusive to that particular category: verbs inflect for tense, aspect and mood; nouns inflect for number and take a possessive marker; while adjectives 'generally do not show either of these sets of distinctions' (*ibid*). There are however, properties which we associate most notably with the adjective class. As outlined in *2.2*, adjectives are often gradable, take intensifiers such as *very*, and variably have attributive and predicative functions. However, in cross-linguistic perspective, adjectives possess not only these properties, but also share many of the properties associated with verbs and nouns (Cabredo Hoffherr 2010: 3). In this section, I will give some examples of adjective classes which share properties with nouns (Dixon's noun-like adjectives, 2006: 22) and others which share properties with verbs (Dixon's verb-like adjectives, 2006: 15).

A noun in Latin has a fixed gender, determined to a large extent by its declension, while adjectives commonly take inflections to agree with the modified head, as in the following examples adapted from Griffin (2011: 13):

20. *servus* *bonus*
slave-MASC.NOM.SG good- MASC.NOM.SG
'The good slave'

21. *puellas* *bonas*
girl-FEM.ACC.PL good- FEM.ACC.PL
'the good girls'

In the above examples, the adjective can take both masculine and feminine inflections to agree with the head, without a change in meaning. The gender is inherent to the noun and does not change, while for the adjective, it is a variable inflection, expressing agreement with the noun. While the morphology of nouns and adjectives is almost identical, the ability for the adjective to appear in a variety of genders marks it out as distinct from the noun class. In Northern Sotho, adjectives have been commonly referred to as 'adjectival nouns' (Van Wyk 1969), and are often seen as a subclass of nouns. There is, however, considerable evidence that adjectives constitute an independent word

class in Northern Sotho, based on their exclusive combination with the adjectival particle when modifying a noun, the semantic effect of reduplication (intensification) and on their ability to take multiple noun class prefixes in concord with the modified head much like in Latin (see Chapter 6 for more detail on this).

Dixon (2006) notes that adjectives often share many syntactic and morphological properties with verbs, and provides evidence from Boumaa Fijian (Dixon 1988) and Tariana, in which adjectives can function as intransitive predicates. The following sentence in Tariana shows the adjective *hanu* 'big' functioning as an intransitive predicate, with the verbal affix *pidana*, indicating tense and modality:

22. *ñamu(-ne)*$_S$ *hanu-ite-pidana* INTRANSITIVE PREDICATE
evil.spirit (FOCUSSED) big-NCl:animate- REMOTE.PST: REPD
'the evil spirit was said to be big' (Aikhenvald 2006)

However, noun phrases can also function as intransitive predicates, suggesting that this syntactic function, while exclusive to verbs in Indo-European languages, has a much greater range of components which can fill the slot in other language families. In this light, Dixon considers the ability of a word to function as an intransitive predicate not to be indicative of its word class. Consider the following example from Dixon's (1988) analysis of Boumaa Fijian, in which the noun phrase *e tagane balavu* 'a tall man' functions as a predicate head without a copula (the *e* here is pronoun):

23. [*e* [*tagane balavu*] HEAD] PREDICATE [*a tama-qu*]$_S$
3SG man tall ART father.1SG.POS
'my father is a tall man' (Dixon 1988)

Adjectives in other languages also share properties with verbs, including taking affixes to mark tense and aspect. Consider the following examples from Korean, Wolof, Maori and Japanese, all of which have adjectives which are similar to verbs. Korean and Japanese adjectives take tense affixes and relative markers, while Wolof adjectives have obligatory relative markers and can also inflect for tense. In Maori, adjectives are often considered 'adjectival verbs' by virtue of their usage with verbal affixes such as the circumfix *e-ana* (such as in 27 below*),* which indicates progressive aspect.

24. Korean: *haengbokha-ess-ten hakseng*
happy -PST-REL student
'a student who was happy' (Haeng 2005: 2)

25. Wolof: *xaj bu rey, ñuul te soxor bi*
dog REL ADJ:big ADJ:black CONJ ADJ:mean DEF
'the big black mean dog (McLaughlin 2004: 254)

26. Japanese: *Hanako-wa utsukushi-I* *Hanako-wa utsukushi-katta*
Hanako-TOP beautiful-PRES Hanako-TOP beautiful-PST
'Hanako is beautiful' 'Hanako was beautiful' (Baker 2003b: 2)

27. Maori: *te whakaaro e pai ana* *he whakaaro pai*
DET thought PROG good PROG DET thought good
'the idea is good' 'a good idea' (Adapted from Harlow 2007: 108)

While each of these languages displays properties in common with verbs, there are also differences which mark them out as distinctive from verbs and, by Dixon's (2004) criteria, an independent lexical category. These features are more noticeable when adjectives function as modifiers in noun phrases such as in the Maori example in 27, in which the adjective can directly modify a noun without the presence of a particle or relative marker. Other distinctions include restricted morphological possibilities in languages with verb-like adjectives (for Korean see Haeng Kang 2005, Sohn 2006; for Wolof, McLaughlin 2006; for Japanese, Mattheson 2003) and different effects of reduplication.

Reduplication is defined by Katamba (1993: 180) as 'a process whereby an affix is realised by phonological material borrowed from the base', and by Sapir (1921: 76) as 'the repetition of all or part of the radical element'. This is to say that in some languages, morphemes or lexemes are repeated, or doubled in order to denote a change in grammatical or semantic properties. This appears to some extent in English in the form of 'adjective doubling' (Alexiadou 2010) in phrases such as *a top top player*, although this is a stylistically marked and unproductive structure in English which Rastall (2004) associates with 'playful English'. Rubino (2013: 1) notes that 'reduplicative morphemes can carry a number of meanings, and in some languages the same reduplicative morpheme is used to denote quite contrary meanings'. The most common functions of reduplication involve the representation of an intensified or reduced meaning, which is possible for nouns, verbs and adjectives alike. Additionally, for nouns, reduplication can indicate plurality, for verbs, it can indicate aspect and for adjectives it can denote superlation or attenuation, and even a change of meaning. Consider the following examples of reduplication of adjectives:

<u>Intensification: Cariteño: (Grant 2003: 205)</u>

28. *bunita* 'beautiful' *bunitangbunita* 'very beautiful'

Diminution: Swahili (Moravcsik 2013: 130)

29. *maji* 'wet' *maji-maji* 'somewhat [quite] wet'

Change in Meaning: Maori (Kruppa 1966)

30. *mate* 'sick' *matemate* 'sickly'

The properties of intensification, comparison and superlation are often used to recognise an adjective class in a language in which adjectives are similar to nouns and verbs. In Northern Sotho, adjectives can be reduplicated twice, thrice (such as in example 33) or even more times (Mphasha 2010: 115) to indicate varying levels of intensification, while nouns do not undergo this process and in verbs, such a change indicates that 'the process or action takes place repeatedly and at intervals' (Lombard 1985: 135). Consider the following examples:

31. *-sepela* 'walk' *-sepelasepela* 'walk back and forth, stroll around' (Lombard 1985: 135)

32. *-tala* 'old' *puku ye talatala* 'a very old book' (Mphasha 2010: 116)

33. *-golo* 'big' *moago yo mogologologolo* 'an extremely big building (Mphasha 2010: 116)

Kruspe (2006: 294) distinguishes the adjective class in Semalai from that of verbs due (among other things) to distinctive semantic and grammatical functions of reduplication. While reduplication of dynamic verbs usually indicates aimlessness or lack of purpose, in adjectival verbs, it once again suggests intensification. Adjectives are also nominalised via what Kruspe refers to as a 'coda copy' infix, in which the coda of the final syllable is inserted into the root. This process has different effects with other word classes, such as denoting imperfective aspect on transitive verbs and the creation of stative intransitive verb forms from nouns (*Ibid*):

34. *suwa* 'go' s*uwa-suwak* 'wandering around' [non-adjectival verb]

jələŋ 'be long' *jəŋləŋ* 'very long' [adjectival verb]

pərəc 'wing' *picrəc* 'to have wings' [nominal (Kruspe 2006: 293-4)

In Latin, it is possible to distinguish noun from adjective based not only on the adjective's ability to take inflections for multiple genders in concord with the noun, but also based on the comparative suffix *–ior* and the infix *–iss,* which indicates intensification and/or superlation. Similarly, adjectival verbs in Japanese can be differentiated from other verbs by virtue of their ability to combine with certain morphemes indicating intensification, and comparative/superlative forms:

35:

*より実行	*実行すぎる	*最も実行	
*yori jikkō	*Jikkō sugiru	*mottomo jikkō	
*more run	*Too run	*most run	
より大きい	大きいすぎる	最も大きい	
yori oki	oki sugiru	mottomo oki	
bigger	too big	the biggest	(Matheson 2003: 22)

In this section, I have demonstrated that cross-linguistic variation in the adjective class is considerable, both in terms of morphosyntactic behaviour and the number of members. In the next two sections, I consider the structure of noun phrases which possess more than one adjective.

2.4 **The Syntax of Polyadjectival Nominal Phrases**

'Polyadjectival nominal phrase (PNP)' is a term coined by Bache (1978: 11) to refer to a noun phrase with two or more modifiers. He defines a modifier as 'words or phrases which premodify the head word of the phrase and can follow a determiner' (1978: 14), and hence includes numerals in this category. Bache looked in great detail at the different functions performed by modifiers and used corpus data to examine the various possible syntactic combinations of modifiers. Commenting upon the syntax of such phrases, Bache proposes a range of properties of PNPs, based on the ordering of modifiers and their relationship with the head and the other modifiers. These include reversibility, distinctiveness, brokenness and the syntactic relationships between modifiers (parataxis and hypotaxis).

Modifiers which operate in paratactic relation modify the head independently and hence can be separated by a comma or a co-ordinating conjunction in phrases such as 'this great and splendid city' (Bache 1978: 20). Modifiers exhibiting hypotaxis cannot be separated in such a way and each modifier can be said to modify the noun phrase constituted by the head noun and all modifiers which follow the element in question, as in the phrase 'unpredictable social results'. Bache considers modifiers which can function in parataxis with other modifiers to constitute an identifiable subclass of adjectives which he refers to as Mod-II adjectives. A sequence of Mod-II adjectives which are separated by commas or conjunctions is labelled a broken sequence, while any modifiers which can precede such a sequence are termed Mod-I adjectives and any which can follow a broken sequence are termed Mod-III adjectives. The characteristics of these adjectival subclasses are discussed in more detail in Chapter 4.

The notion of hypotactic relation relates to what many linguists refer to as the difference between 'stacked modification' and 'submodification', with modifiers described according to whether they directly modify the head, or modify another element within the phrase. Stacked adjectival modification (Scott 2002) is also known as 'asyndetic coordination' (Cinque 2010: 31) and 'parallel modification' (Sproat and Shih 1988: 477) and is the term given to a noun phrase in which modifiers separately modify the same head in phrases such as *the big brown dog*. Submodification involves modifiers which do not directly modify the head and rather give us more information about one of the other modifiers. Feist (2012: 65) gives as an example the phrase 'a nice warm room', in which he suggests that the first adjective *nice* does not refer to the room, but rather to the warmth suggested by the subsequent adjective. Another more obvious example given by Feist is the phrase 'her dark red hair', in which the first adjective *dark* clearly describes the colour term *red* rather than directly modifying the head noun.

The order among modifiers in PNPs is of particular interest to linguists. Bache (1978) analyses such phrases as having a reversible or non-reversible order, with the former subcategorised into distinctive and non-distinctive orders. Non-reversible orders appear in noun phrases in which only one ordering of the modifiers is grammatically possible, such as 'the world's deepest known cave' (Ferris 1993: 146). Reversible sequences can have adjectives appearing in various different orders, without affecting the grammaticality of the phrase. Bache (1978: 17) refers to reversible sequences in which a change of order leads to a change of meaning, such as in 'the brilliant first chapter' as having a distinctive order. Phrases where this is not the case, such as 'well-washed, well-fed babies' are labelled 'non-distinctive' (1978: 18).

Even within non-distinctive reversible PNPs, the order in which modifiers appear is often significant. Whorf (1937 [1956]) suggests that a primary factor governing adjective order is the relative subjectivity of the modifiers, with adjectives which convey subjective, evaluative judgements preceding those which are more objective and inherent to the modified noun. Sometimes, however, as Feist (2012: 208) points out, modifiers have discourse functions which affect their position within a phrase. Modifiers may be placed in string-initial position in order to effect the focus of the phrase, or to 'thematize' them (Halliday 2004: ch.3). Scott (2002: 2) recognises this fact and notes that any modifier can be 'fronted' or preposed to be the topic or focus. While the order among modifiers is undoubtedly affected by the grammatical, functional and semantic properties of each element, the most logical explanation is sometimes as simple as theadjective considered by the speaker as most important (or for which emphasis is most desirable) is placed first in a phrase.

The order among adjectives also depends to a great extent upon the function of each modifier as a specifier, central descriptive adjective or classifier. Linguists including Bache (1978) and Feist (2012) have based their work on separating adjectives into functional zones along these lines, which in turn allows the structure of PNPs to be predicted. Warren (1984: 283) suggests that adjectives appearing closer to the head carry a stronger 'classificatory strength', while Coates (1977: 14) refers to the word class or morphological derivation of an adjective as determining its position within a string. Such claims, however, only predict the ordering in strings of modifiers which function in hypotaxis. More commonly, these approaches are augmented or even completely disregarded in favour of a more semantic-based approach to predicting adjective order.

Scott (2002: 2) recognises that there exist a variety of 'syntactic/semantic and even pragmatic criteria [which] come into play when dealing with stacked adjectival modification', but suggests that focusing on semantic sub-classes of adjectives such as SIZE, COLOUR and VALUE 'has been shown to explain many of the aspects of the cross-linguistic syntactic ordering restrictions [in PNPs]'. Sproat and Shih (1991: 591) provide one of the most comprehensive cross-linguistic analyses of adjective ordering restrictions, and suggest that the semantic-based order theories proposed for English are largely universal across languages. They do stipulate, however, that this only works for 'direct hierarchical modifiers' (those functioning in parataxis) and that 'adjectival modification cross-linguistically is not a unitary phenomenon but breaks down into various kinds'. Semantic and function-based adjective order theories, which in general have their base in the study of English PNP structure, are expanded upon in Chapter 4.

A major concept in the analysis of the syntax of PNPs on a cross-linguistic level is that of head-movement and noun-raising (N-raising). These concepts relate to Chomsky's Universal Grammar, and in particular to Government and Binding theory (1975). Giorgio and Lombardi (1991: 6) consider the problems of comparing linguistic structures across languages which exhibit considerably different morphosyntactic properties from one another. They suggest that 'a cluster of differential properties distinguishing two or more languages from each other can often be reduced by an accurate grammatical analysis to a single, more abstract difference' (1991: 6). This is to say that it is possible to compare the same grammatical feature in two or more languages which have mutually distinctive typological profiles, by understanding the particular feature at a more abstract level.

This notion is most relevant to this project in terms of how one understands the possible cross-linguistic variation in the ordering and position of modifiers in PNPs. Cinque (2010) analyses the

postnominal position of adjectives in Romance languages as being the result of N-raising, in which the noun moves ahead of adjectives which modify it in examples such as the following from Italian:

36. *la sola possibile invasione romana della Tracia*
the only possible invasion Roman of-the Thrace
'the only possible Roman invasion of Thrace' (Cinque 2010: 1)

Cinque (*Ibid*) notes that the noun *invasion* must raise past the adjective *romana* in this example, though it can only raise past the adjective *possibile* if the adjective of nationality is omitted. Cinque notes that his own previous explanation of postnominal adjectives being a result of N-raising (1994: 87) is problematized by the fact that strings of postnominal adjectives in Romance languages usually appear in a mirror-image order to their equivalents in Germanic languages. If adjective ordering is seen to be universal, the presence of a mirror-image order suggests that adjectives in such PNPs are right-adjoined to the noun, rather than the noun having raised past them. Additionally, this raises questions about the presence of postposed adjectives in such phrases, a point which I return to in Welsh (see Chapter 8).

Sproat and Shih (1991b: 486) make a similar observation for Irish, and suggest that 'ordering restrictions should be stated in terms of closeness to the head, rather than in terms of linear ordering', a proposition which reflects the incomplete nature of the analysis of postnominal adjectives as being a product of N-movement. Willis (2006: 1807) also rejects head movement as an explanation for postnominal adjectives in Welsh and suggests that such an analysis is 'grounded in the theoretical context of recent work in comparative syntax'. Willis posits that the presence in Welsh both of orders which are the same as in English and those which constitute a mirror-image, contradicts N-raising analyses of noun phrases in languages with postnominal modifiers.

The ordering within complex modification strings in noun phrases in a single language is a complex and multi-faceted phenomenon. Attempting to explain such a phenomenon across a range of languages for a lexical category which is so structurally heterogenous and problematic to define is always likely to be a task which fails to cover all possible projections.

2.5 **Summary**

In this chapter I have given an account of the variation exhibited by the adjective class across languages as well as providing an overview of the debate over its universal nature. For the main purpose of this thesis, I follow Dixon (2006) and Baker (2003) in recognising the adjective class as an independent lexical category based on differences in syntax and morphology, and analyse the class in each language from this ideology. The structure of PNPs and the ordering of adjectives is also the subject of considerable variation across languages and the explanations of their syntactic structures vary in terms of which elements are considered most relevant.

An assessment of the relative merits of N-raising analyses for the existence of postnominal adjectives will not be attempted in this thesis, with my objectives more grounded in providing a comparison of adjective ordering restrictions across a set of languages with considerably different morphosyntactic profiles. The effectiveness of grammatical or function-based analyses of the ordering within complex modification strings will be assessed along with the merits of semantic-based order theories, first in English and then in the other languages in my sample. This will provide additional perspective on the subject of whether, as Sproat and Shih (1991: 591) suggest, the ordering of modifiers in PNPs can be considered universal across languages.

3. **Research Design**

3.0 **Introduction**

In this chapter, I outline the structure of my research for this project. In 3.1, I begin by providing a list of research questions and aims.In 3.2, I offer a discussion of my methodological choices and justify the choice of a mixed method approach as well as the ways in which my methods developed over the course of the project. In 3.3 I discuss my sampling process and in 3.4 I reflect on the ethical considerations I have observed.

3.1 Aims and **Research Questions**

The overall aim of my project is to provide original thought on how strings of attributive adjectives are organised in languages with different morphological and syntactic structures. McNally (2008: 2) and Cabredo-Hoffherr (2010: 1) both begin their recent edited volumes on the adjective class with the observation that the amount of literature produced on the category is considerably smaller than the extent of work done on nouns and verbs. It is hoped that this project can contribute towards and extend our knowledge of the range behaviour and properties of the adjective class on a cross-linguistic level.

Litosseliti (2010: 9) suggests that the establishment of a small number of important research questions is 'the key to any empirical research project'. My project has a dual purpose in that I am looking first to provide analyses of how adjectives are organised in each individual language I study, then also to offer an evaluation of the phenomenon of adjective ordering on a more universal level based on a synthesis of these studies of languages with considerably distinctive features. Major research questions include:

1. What are the most reasonable explanations for the ordering of adjectives in English?
2. Does Northern Sotho have an independent lexical category 'adjective'?
3. What is the most natural-sounding, normative order for attributive adjectives in Northern Sotho?
4. What is the most natural-sounding, normative order for attributive adjectives in Welsh?
5. How does the ordering in postnominal strings of attributive adjectives vary between Welsh and Northern Sotho?

6. How does the ordering in prenominal adjective strings vary between English, Chinese and Polish, and why (if at all) do these languages exhibit syntactic variation of this kind?

7. How does the presence of multiple adjectives in Tagalog affect the structure of noun phrases?

8. What factors affect the order of Tagalog adjectives and their position in relation to the head?

9. Which adjective order theories in English can be said to be (to some extent) universal across the focus languages in this study?

10. What factors affect the order in which speakers of different languages place adjectives within a string? To what extent are context, function, emphasis and constructional grammatical meaning important across different languages?

11. Could ordering restrictions among adjective strings be used as a way of judging whether a language has an independent lexical category 'adjective' on grounds of syntactic behaviour?

Some of these research questions are language-specific (e.g. questions 7 and 8 which refer exclusively to Tagalog) and will therefore be addressed within the appropriate chapters for each individual language. Other questions which concern adjective order on a more abstract level will be addressed in the final chapter, when I offer some universal observations based on conclusions for each language.

3.2 **Methodology**

Litosseliti (2010: 1) suggests that 'issues of design, collection and analysis of data are central to any discussion of methods'. This project involves collection and analysis of a variety of different forms of linguistic data in six different languages, which means that the scope of my methodology is very complex and varied. Throughout the research process, I handle predominantly quantitative data (though also some qualitative) and employ a mixed-method approach to data collection, combining corpus and field methods. In this section, I consider the different strategies used by researchers in linguistics to gain reliable data, as well as evaluating the positives and negatives of approaches used in other projects involving the study of multiple adjective sequencing. In *3.2.1*, I discuss and justify my decision to use a mixed-method approach in order to provide data on which to present a realistic

conclusion, before outlining the development and structure of my data collection and analysis in each of my focus languages in *3.2.2*.

3.2.1 Justification of a Mixed-method Approach

Nachmias (1985: 9) suggests that 'reliable knowledge' produced by research in the social sciences should 'enable us to explain, predict and understand empirical phenomena', a notion which has motivated my methodological choices to a great extent. In my work, I want not only to be able to describe how speakers of different languages deal with multiple adjective strings, but also to go some way towards explaining and understanding why this is the case. If there are recurring cross-linguistic patterns in adjective sequencing, this tells us something about universal grammar and how language works. If languages with different grammatical structures for expressing adjectival concepts differ in the way in which speakers of those languages order sequences of adjectives, then this allows us to study the parameters for such variation.

Liddy (2003: 2126) defines natural language processing as 'a theoretically-motivated range of computational techniques for analysing and representing naturally occurring texts at one or more levels of linguistic analysis for the purpose of achieving human-like language processing for a range of tasks or applications'. This definition suggests that by analysing large banks of naturally produced text, it is possible to make observations and predictions as to how speakers use language. However, any conclusion drawn from such data remains to some extent artificial, as it lacks any overt intuition or reflection on the part of native speakers of the language produced.

As the phenomenon I am studying involves a comparison of syntactic structures across languages, the data I collect is primarily quantitative. In a noun phrase with two adjectives, there are two possible orders for this string, while with three adjectives this number rises to six possible sequences. I am investigating which sequences are ungrammatical, which are the most natural-sounding and which are possible, but sound less natural. I am also interested in whether changing the order of adjectives changes the meaning. These questions shape my methodological choices and I can aim to answer them in two different ways: I can survey large banks of pre-existing language in the form of linguistic corpora to identify patterns in usage; or I can ask a large number of speakers which orders sound more natural than others, through questionnaires and interviews. Both of these methodologies have advantages and disadvantages.

Corpus studies are useful to a linguist as they allow us to observe the way in which a particular feature is used in data which was collected independently to the current project. This means that the data are completely neutral and that the researcher cannot shape the data, subconsciously or otherwise, to suit his own needs. Biber et al (1998: 1) observe that corpus methods combine studies of structure and studies of usage, and note that 'rather than looking at what is theoretically possible, we study the actual language used in naturally-occurring texts'. The authors also suggest that 'corpus-based analysis should be seen as a complementary approach to more traditional approaches' (1998: 9) and that corpus studies alone are not always sufficient to investigate or explain fully, a linguistic phenomenon.

Newman and Ratliff (2001: 49) suggest that interaction with native speakers of a language is essential in order to gain a full and accurate knowledge of how the language is used. They suggest that native speakers 'have background knowledge of context that an outsider may lack' and that 'good speakers have a sense of the difference between not only what is grammatical and what is ungrammatical but also of what is said and what could be said but is not'. This is an aspect of linguistic fieldwork which provides an advantage over corpus-based methods. While corpora can indicate what structures commonly appear, it is difficult for a researcher to speculate on the grammaticality or subtle change of meaning of structures which do not appear. The authors go on to emphasise this point, noting that '[informants] can contribute valuable judgements about the meaning and functions of particular constructions. Some speakers are especially sensitive to nuances of style and register, able to point out the effects of lexical and grammatical choices'. (2001: 51)

Litosseliti (2010: 30) suggests that methods such as the quantitative data from corpus studies are often considered as separate from fieldwork and more qualitative methods such as native speaker judgement. She notes that 'it is quite commonplace for the two paradigms to be directly contrasted', but puts forward that a combination of methods is more desirable (2010: 30). Chomsky is one high profile linguist who has been critical of empiricist approaches to data collection and he prefers a rationalist approach to linguistic analysis to a corpus-based approach, which he considers descriptive and statistics-based (McEnery and Wilson 2007: 5). Miles and Huberman (1984) note that most studies in the field of linguistics fall somewhere along a continuum between qualitative and quantitative methods, while Green & Preston (2005: 167) suggest that there are very few approaches which fit the stereotypical extremes of the 'introverted statistician' or the 'hang-loose ethnographer'. The pragmatist's stance (Litosseliti 2010, Bryman 2001, Rossman & Wilson 1985) is that methodologies are not necessarily delineable into one category or another, but rather

constitute a collection of techniques which allow a researcher to reach a conclusion based on analysing evidence in as many forms as possible. This is the ideology I adopt when approaching this project.

In my study of complex modification strings in English, because there have already been a number of studies carried out on this phenomenon using introspection (Quirk et al 1985, and others) and corpus data (Bache 1978, Malouf 2001), I choose to base my work on field methods. I conducted questionnaires with 50 participants who selected the most natural-sounding ordering for 40 PNPs which were designed to test some of the theories proposed by linguists who had already studied this phenomenon using other methods. Denscombe (2003: 22) notes that questionnaires which rely upon native intuition can be criticized for 'the possibility of contradictions and internal inconsistencies' which appear in the data.

While my questionnaires contain phrases which are context-independent and rely heavily on native speaker intuition, it was felt that such judgements would offer a more explanatory approach to investigating this phenomenon, with all inconsistencies and contradictions evaluated at length. The lack of context for the phrases included leads to more than one possible interpretation of the constructional grammatical meaning in a number of cases, which are discussed in detail in Chapter 5. Although this may be considered a weakness of this methodology, my corpus studies also provide practice-based evidence from which to draw conclusions, and my qualitative questionnaire sections allow for investigation of such cases. While co-text might have been offered to narrow down the range of interpretations of phrases, this would have made the questionnaires overly long and would have necessitated the removal of some of the questions, provided a less broad study. Similarly, had I asked participants to give detailed reflections on such cases within the questionnaire, this would have resulted in the same issues. When such distinctive reversible orders arose, I encouraged participants to note them in their qualitative reflections and took field notes which I have used in my interpretative comments in the data chapters.

Questionnaires are suggested as a useful method for studying grammaticality judgements by Sakel and Everett (2012: 129), who observe that 'packing questionnaires with questions to cover all potential outcomes' is a good way of documenting a particular grammatical feature. Although for some phrases used in questionnaires in this project, a degree of creativity is required of the participants when suggesting a preferred order, these judgements offer a valuable insight as to what structures are possible, impossible and most natural-sounding in a language. This is the same

rationale I use for studying Polish and Chinese, which also have had a degree of work done on the ordering of adjective chains. The methodology adopted varies from one language to another based on a number of factors. A detailed discussion of the process followed for each individual language is provided in *3.2.2*.

Mixed method approaches have been recommended by many authors as being ideal for linguistic studies; these include Johnstone (2000: 61), who suggests that 'triangulation' of methodology is important as way of obtaining reliable and verifiable results. She advocates 'using more than one source of evidence' as being important in demonstrating that data are accurate and not affected by the selection of one exclusive method of data collection. Baker (2010: 94) suggests that corpus data can 'enable researchers to quantify linguistic patterns, providing more solid conclusions to be reached' but also notes the importance of 'further qualitative analysis which steps outside the corpus'. Sakel and Everett (2012: 101) agree with this suggestion and propose that 'one could, for example, carry out a questionnaire-type study collecting quantitative data, while at the same time asking for further written explanations which could be analysed qualitatively'. Angouri (2010: 41) demonstrates how an integrated methodology can help the research in 'avoiding orthodoxies such as those imposed by mono-dimensional purists' and warns of the damage such unvaried approaches can cause to the outcomes of research.

Overall, my combination of corpus data and original fieldwork allows me to make informed and reliable observations on the nature of adjective sequencing in each of my focus languages. In situations where little material is available on how languages organise complex modification strings, corpus data is valuable to provide an insight into what patterns commonly occur. Where considerable work has already been done, the use of fieldwork is desirable to find new ways of explaining and adding to our current understanding of the phenomenon.

3.2.2 Methodological Development of Data Collection in Focus Languages

Throughout this project, I use both corpus and field-based methods to study the phenomenon of adjective ordering in my six focus languages, with the research design showing some variability from one language to another. The choices I have made represent a chronological development in my methodology based upon continuous reflection during the research process, as well as an awareness of the limitations, both financial and practical, to the potential scope of the project. In this section, I

provide an overview and discussion of the methods employed and adapted to investigate noun phrase structure in English, Northern Sotho, Welsh, Tagalog, Polish and Chinese.

In English, a large number of studies have been done on adjective order using a variety of methods, as detailed in Chapter 2. A questionnaire was developed which allows me to evaluate the extent to which these different studies provide salient explanations of the ordering within modification strings. Until now, no significant effort has been made to describe or account for the behaviour of PNPs in Northern Sotho; in fact the adjective class has been somewhat contested in the language (see Chapter 6). I use the *Pretoria Sepedi Corpus* to study patterns of ordering in natural language before comparing and investigating these patterns further in my fieldwork with 30 native speakers of the language. In Welsh, I use data from the *CEG Corpus* and my own micro-corpus based on National Trust leaflets to inform my field-based data collection.

In Tagalog, there has been very little written on adjective strings, so I investigate the structure of modified noun phrases in Bloomfield's (1917) texts before comparing this dataset with the results of my fieldwork. It was originally planned that this project would involve a comparison of syntactic structures across Tagalog, Welsh and Northern Sotho as languages which differ from English in respect of the morphosyntax of each adjective class. However, it was decided that a comparison between English and other languages which have predominantly prenominal adjectives was also desirable and, for this reason, Chinese and Polish were compared to Tagalog as part of a smaller-scale field-based study with a broader base in terms of focus languages.

For each language, L1 speakers were consulted in the preparation of fieldwork materials. For each questionnaire, a set of phrases were developed independently before a fluent native speaker gave comments on the suitability of each phrase. In Northern Sotho, this was my field assistant Mokgadi Thamahanyane; for Welsh, I had the assistance of Laura Arman (University of Manchester) and Dr Cathryn Charnell White (University of Aberystwyth); for Polish I was assisted by my colleague at Edge Hill University Dr Agata Daleszynska; for Chinese, I was advised by Zhou You of the Edge Hill University Confucius Institute; for Tagalog, I had the assistance of Mercy Maata, the co-ordinator of the website Tagalogguru.com.

3.2.2.1 Data Collection in English

The aims of my research in English are to investigate, test and develop the range of explanations of adjective sequencing proposed by, in particular, Bache (1978), Dixon (1982) and Quirk et al (1985), as well as to test the findings of investigations of the phenomenon of adjective ordering. The majority of work on this feature has been conducted using corpus methods (Wulff 2003; Bache 1978; Malouf 2000; Greenberg and Srinivasan 2003; Choi 1987; Shaw and Hatzivassiloglou 1999) due to the consideration that multiple adjective strings, relatively speaking, are not a particularly common feature in the English language. Truswell (2009: 525) chooses Google as the basis for his corpus study and justifies this choice by observing that 'although the British National Corpus contains 262,838 tokens of pairs of attributive adjectives, over 76% of adjective pairs occur only once, and therefore trivially show only one order'. He claims that 'for a study that aims to investigate consistency of ordering of adjective pairs, then even the BNC is not large enough to attribute much significance to the results'. Malouf (2000: 86) agrees with this suggestion, adding 'with adjective sequences so rare, the chances of finding information about any *particular* sequence of adjectives is extremely small'.

This observation suggests that a corpus study is useful in studying patterns within commonly existing adjective combinations but in phrases which occur less commonly in natural language production, the order of adjectives is better investigated using other methods. When preparing the selection of noun phrases I wished to investigate, I used Google as a medium through which to investigate the potential for different orderings of adjectives within my examples. I wanted to examine whether I could gain insights into the features I wished to investigate using Truswell's (2009) method rather than questionnaires.

For some examples, this provides me with interesting data; *the American classical singer* appears 204,000 times, while *the classical American singer* appears only 8 times. This suggests very strongly that the latter order is highly non-preferred, with the alternative being much more likely to appear. In my own research, however, *the classical American singer* is chosen by 36% of participants as the most natural-sounding order, suggesting that this sequence is not at all ungrammatical. Similarly, the noun phrase *the animated Brazilian folk tale* was not found in a Google search with any of the potential adjective orders, and offers valuable insights through its inclusion in my fieldwork.

Everett and Sakel (2012: 131) suggest 'at least 30 participants in order to do simple statistics with your data' but that ideally more participants would be consulted. Denscombe (2003: 23) also defends the use of basic analytical techniques for such studies, suggesting that criticism of

interpretative studies with a lack of 'mathematical' statistical analysis is often unjustified. Dixon (1982) and Danks and Glucksberg (1971) have both used questionnaires to investigate the phenomenon of adjective ordering and the analytical method employed in this project is similar to that used by these authors. The choice to use questionnaires as the research method for my English data collection is also influenced by the fact that, as so much investigation and work has already been done in this area using corpus methods, a further corpus study would be unlikely to add much to the work already completed.

The questionnaire (included in appendix A2, and discussed further in *Chapter 5*) contains 40 questions and is deliberately created so as to cover as many areas of theory discussed in this chapter as possible but without being too long and onerous for participants. Question format involves a head noun and a number of adjectives in brackets, for which the participant is asked to suggest the most natural-sounding order. This format remains consistent throughout the questionnaire so that participants get into a routine and are not made to feel confused by a variety of different styles of question, with adjectives always presented in alphabetical order so as not to influence the choice.

For each question, participants are asked to rate (on a scale of 1-3) how difficult it is to suggest a normative ordering, allowing me to elicit an average difficulty (referred to here as the 'difficulty index') for different kinds of sequences. This point is expanded upon in *Chapter 5*. The most complex and open questions are posed on the last page of the questionnaire, where participants are asked to reflect on what factors they feel lead them to organise adjectives in a particular sequence, and how difficult they found this as a task. These questions are of a deliberately qualitative nature, with a view to possibly eliciting additional perspectives on why speakers feel they might organise adjective strings in a particular way. This questionnaire, as the first of my study, was piloted with members of staff in my department. Feedback which influenced the eventual questionnaire used included the changing of certain adjectives which sounded more natural, and the placement of adjectives in alphabetical order so as to minimise the effect of leading questions.

3.2.2.2 Data Collection in Northern Sotho

My study of Northern Sotho (alternatively 'Sepedi'- see *C6*) adjectives combines corpus data with fieldwork in a mixed-method approach designed to provide a balanced, broad and representative data set. Chelliah and De Reuse (2011: 403) suggest that corpus studies prior to fieldwork are useful in that they allow the researcher to conduct preliminary investigations of language use (2011: 105).

In this project, the corpus data are taken from the *Pretoria Sepedi Corpus (PSC)*, the biggest existing corpus of the Northern Sotho language, developed at the University of Pretoria in the late 1990s. The fieldwork I conducted is based on a questionnaire featuring 42 questions in a similar format to that employed for English adjectives. These questionnaires were designed to account for as many potential combinations as possible, and also led to considerable discussion with participants as to the nature and relative possibility of particular collocations in the language.

The *PSC* is made up of 5.8 million words and is described by its compilers as an 'organic corpus' (De Schryver & Prinsloo 2000: 92), which suggests that its size and composition is consistently being modified. The authors reassure us, however, that this is a 'stable corpus' and that its content is representative of the language such that 'doubling the size of such well-designed corpora will not substantially alter the stability' (2000: 101). However, some of the examples in my dataset from the *PSC* are from texts which might not be considered as representing naturally-occurring language. Many are from the Sepedi version of the Bible, which is likely to have been translated from German into Sepedi by European missionaries with the help of native speakers. These phrases will have been translated from the original Greek or Hebrew into German before being translated into Sepedi. Mauranen (2000: 10) talks about the often unrepresentative nature of translated texts, referring to such styles as 'translationese'. Additionally, the corpus is made up of completely written texts in the standard form of a language which is subject to a huge amount of regional dialectal variation (see the background document in the appendices).While the corpus allows us to analyse commonly occurring patterns, field-based methods allow a broader analysis in which a greater variety of collocations can be examined.

The collection of my corpus data was relatively straight-forward. The *PSC* is not available online but I was fortunate that the regulators of the corpus were kind enough to extract the requested data for me. My fieldwork involved considerably more planning. After considerable effort finding speakers of the language in the UK and Europe, I had to conclude that I would be extremely unlikely to find enough speakers of Northern Sotho outside of Southern Africa on which to base a study. I therefore planned a field trip to the Limpopo province of South Africa, where I interviewed 30 participants with a similar questionnaire (appendix *A3*) to that used to elicit data in English (see *Chapter 5*).

Each participant was informed prior to beginning the questionnaire that it should take around 30 minutes to complete. In reality, the process often took somewhat longer than this. In hindsight, this was partly because this time estimate was based on how long it took my English participants to complete similar questionnaires. These participants were conducting a questionnaire partly in a

language other than their own L1, and were also completing the task in a language in which adjectives are not universally-recognised as a linguistic concept (see Chapter 6). My major concern during the interviews was that participants seemed happy with how much time the questionnaires were taking; this was universally the case, and participants seemed keen to spend extra time on the questionnaires as they were diligent and responsible and wanted the data they provided to be of the highest possible quality. For this reason, I had no major concerns if on some occasions, participants spent more than an hour on a questionnaire.

As this was an area with which I was not familiar, I employed a Northern Sotho-speaking research assistant with knowledge of the area and with experience in practical fieldwork. I was able to get in touch with such a person through the University of South Africa and an agreement was made that, as someone with experience of working in the area, she would take care of all the practical issues of conducting my research in the field. This included arranging a sample of participants, setting up meetings for elicitation, and transport from one meeting to another. Prior to my field trip, she had helped me to draft the questionnaire and understood what each question was investigating. With participants whose spoken English was less strong, I encouraged my research assistant to advise them in Sepedi. I discussed my goals at length with my assistant and she was aware at all times of what I wished her to communicate to the participants.

As I began my data collection, it became clear that there were a small number of errors in the questionnaire content and that certain words did not make sense in the context in which they were used. Many of these were to do with collocational restrictions or irregular morphology; these features are expanded upon in *7.1*. This was to be expected due to the minimal amount of work done on this phenomenon in the language, and later questionnaires were amended manually so as to avoid all participants experiencing the same occasional confusions. I explained to all participants that I was not a proficient speaker of the language and made it clear that this was in no way a test of their knowledge.

These amendments actually proved to be a useful point of reference in making this suggestion clear to participants; it allowed them to realise that I was relying upon them to use their intuitions as native speakers to make linguistic choices, and I feel it led to a much more relaxed and open research environment. Bowern (2008: 136-7) emphasises the need for researchers to avoid coming over as patronising or prescriptive, as well as allowing participants the time to answer the questions being asked. I feel that the approach I took led to a positive atmosphere of cooperation and mutual

respect and that the measured approach taken in accounting for all the practical considerations outlined in this section contributed greatly to the elicitation of a broad, reliable and useful data set.

The questionnaire was structured in the same way as the English data collection, with participants given a head noun and a selection of adjectives, and being asked to suggest the most natural-sounding order for the phrase. So that participants would be clear on the overall meaning of the phrase, an English translation was given. Bowern (2010: 80) suggests that 'this method of data collection is very good if you need a standard data set over multiple respondents, for example in examining potential variation' but also warns that 'leading questions and other elicitation artefacts can lead to apparent problems with elicited judgements'. This is an issue which was considered carefully when supplying English translations as I was concerned that the order of English adjectives in the phrases may have influenced the participants' responses.

However, as I was aware that the structures in participants' mother tongue may at times have seemed complicated or perhaps awkward, I felt an English equivalent was important to provide context for the questions. I made it very clear to participants that the order in English was not important and that they should only consider this translation as a guideline for their understanding of the overall meaning I wanted them to construct. Bowern (2008: 81) suggests that clear instructions should be given to the participants, such as 'can the questionnaire-taker substitute a word if they can't think of a good translation' and 'do they have to translate literally, even if it sounds stilted in in their language'. In this light, I told participants to discuss any problematic questions with me and with my consultant, and reassured them that they could paraphrase any phrases which sounded awkward or unnatural.

The questions were intended to investigate the ordering among central and peripheral adjectives in Northern Sotho and were based partly on the corpus data and partly on the data obtained in English and on the background material discussed in *Chapters 2 and 4*. This method of data collection provided me with the opportunity to discuss phrases with native speakers of the language and provided me with most of the insights in *7.1*, as well as allowing me to ask speakers whether alternative orders to those which they returned sounded grammatical or natural, and whether reversing an order changed the meaning or the focus. These are insights which I could not possibly have gained using a strictly corpus-oriented methodology, and allowed me to provide a much broader and deeper analysis.

3.2.2.3 Data Collection in Welsh

As in the previous case study of Northern Sotho, a mixed method approach is adopted for Welsh, which combines corpus study and original fieldwork in the form of questionnaire. For my corpus work, the million-word *CEG Corpus* has been used along with a small home-made corpus based on bilingual leaflets for tourist attractions in Wales, produced by the National Trust. This micro-corpus was inspired by Bache's (1978) methodology and was used to inform the planning of my questionnaire. My collected sample, which shall henceforth be referred to as the *National Trust Micro-Corpus (NTMC)* consists of 125 PNPs from 26 bilingual leaflets which are all written in both Welsh and English. As these leaflets advertise areas of natural beauty and historical significance, they are naturally very descriptive and contain numerous examples of nouns modified by multiple adjectives. Although this corpus sample allows me to make some primary observations of the adjective ordering tendencies in Welsh, it is possible that these examples may be translated from an English text and hence lack authenticity. It is thus important to triangulate my methods by comparing these data to those elicited in my fieldwork and from the CEG Corpus. The *CEG* data augments this smaller corpus by providing a larger data set, with a representative 280-token sample taken from a total of 2472 PNPs which appear in the corpus. The corpus is much smaller than the *Pretoria Sepedi Corpus* but the frequency of PNPs is considerably higher, as might be expected considering the small unproductive adjective class in Northern Sotho. Overall, my corpus data includes over 400 PNPs, offering a range of examples from naturally-occurring language.

I conducted my Welsh questionnaire with 30 participants from Aberystwyth, all of whom were native L1 speakers of Welsh and have spoken the language from birth. Sakel and Everett (2012: 130) suggest that 'even small changes in your questions can lead to very different answers', while Denscombe (2003: 153) explains the importance of 'focusing on the exact wording and structure of the questions'. In light of these comments, I reflected upon the data I collected for Northern Sotho (*Chapter 6/7*) in which participants were often keen to tell me when more than one order was possible, or when certain orders sounded unnatural. In my Welsh questionnaire, for phrases which have just two or three adjectives, I have supplied all of the possible orders, inviting participants to put a tick next to the most natural sounding order, and a cross next to any which sound 'wrong or unnatural'.

I also felt that 40 questions made the Northern Sotho questionnaire too long, so I reduced this number to just 30 for my Welsh fieldwork. In addition to this, the new tick-based methodology makes the questionnaire quicker to complete as there is less writing for the participant. While there

are fewer phrases in this questionnaire and the format is different, all the same potential combinations of semantic and functional subclasses are included, and I elicit more detailed data as I am asking participants to identify not just the most natural order, but also any unnatural orders. Although this provides a dataset which is different to those for my other languages, I felt this improvement was desirable and offered me a stronger basis from which to draw conclusions in Welsh. A smaller number of longer PNPs with more than three adjectives are included in Section B of the questionnaire, retaining the question structure employed with English and Northern Sotho participants (to avoid producing lists of up to 120 possible orders for these questions), while the new question structure employed in Section A is exemplified in *Figure 3.1* below:

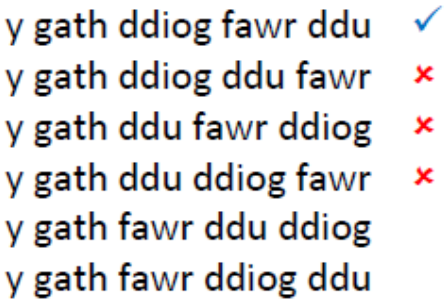


Figure 3.1: Structure of Multiple Choice Questions in Section A of the Welsh Questionnaire

The selections above suggest that *y gath ddiog fawr ddu* 'the lazy big black cat' sounds the most natural and that the three phrases followed by a cross all sound wrong or unnatural. Furthermore, there is an indication that the final two orders are acceptable but sound less natural than the ticked order at the top. This particular phrase is used as an example in my questionnaire, and offers me much more information than the methodology employed for the English and Northern Sotho questionnaires.

The combination of corpus data which exemplify common orders in naturally-occurring language, with the grammaticality judgements and reflections offered by participants completing my questionnaires allows me to carry out a broad and informed analysis of the conditions for variation in Welsh adjective order. In *8.2* and *8.3*, I provide analysis of each data set and in *8.4*, I propose a set of conditions under which adjectives in Welsh appear in either the same order or a mirror-image order to the equivalent structures in English.

3.2.2.4 Data Collection in Polish, Tagalog and Mandarin Chinese

The original plan for this thesis was to study Tagalog as an example of a language in which adjectives can appear either before or after the noun, as a complement to the typically prenominal adjectives in English, and the predominantly postnominal adjectives of Welsh and Northern Sotho. However, as the project developed, it became important to investigate the ordering of adjectives in other languages which are head-final in terms of nominal phrase syntax. Therefore, it was decided that, rather than carry out additional large-scale studies such as those outlined in the previous sections on Welsh, Northern Sotho and English, a smaller scale comparative project be done. As so much work has been carried out on English as language with prenominal adjectives, it was felt that a smaller comparative project would be sufficient to offer some comparative analysis the extent to which other ADJ-N languages reflect adjective order theories. In traditional typological studies such as those carried out by Greenberg (1971) and Dryer et al (2013) at the *World Atlas of Language Structures*, smaller studies of larger samples of languages form the basis of conclusions and in this light, this final set of data collection was restricted to three smaller case studies.

A shorter questionnaire was developed featuring just ten simple sentences, each of which was investigated in Polish, Chinese and Northern Sotho. Rather than looking at 30 to 40 sentences in each language, the same sentence was translated into each of these languages by a native expert, before the questionnaire was carried out with twelve native speakers of each language. This smaller set of questions was designed to produce a concise sketch of the trends within each language, which would be comparable across the three focus languages. Wherever possible, participants completed the questionnaire in small groups and were encouraged to construct the sentences independently before discussing their responses with each other and with the researcher. They then responded to three more qualitative, reflection-based questions on the final page.

Edley and Litosseliti (2011: 169) suggest that focus groups are excellent '*supplementary* sources of data' and are particularly useful in 'providing multiple views on any given subject or topic'. Wray and Bloomer (2006: 153) note that 'the strength of the focus group lies in the construction of a group view'. In this project, although I did not use focus groups as such, I wanted to allow participants to reflect upon their responses to the first ten questions and to discuss and compare them with those responses given by their fellow participants before responding to the final three questions. It was also a chance for me to ask questions and get grammaticality judgements on the ten sentences in the focus language, and to make sure that participants understood the final three questions. In each session, I made field notes which informed my discussion of the variability in ordering.

In these questionnaires, rather than asking speakers to respond to a noun phrase in isolation from a text, each phrase was presented as part of an otherwise complete simple sentence, but with the adjectives placed in brackets, thus:

Māmā mǎile yī …… qì

(diàn/ guóchǎn/ táixīn)

妈妈买了一(电/国产/台新)器

Figure 3.2: Structure of Questions in Mandarin Chinese Questionnaire

As illustrated in the above example (which translates as *Mother bought a new electric domestic appliance*), the sentences in the Chinese questionnaire were presented both in traditional Chinese characters and in the Romanised script (Pinyin). This allowed me to follow the questionnaire more easily (as my reading of Chinese characters is weak), while also respecting the participants by using their native writing system rather than just the Romanised equivalent. As all three languages have adjective classes with particular morphological behaviour depending upon phonological, functional and semantic criteria, participants were encouraged to amend the forms of the words in brackets according to what sounds most natural in the given context. Chinese participants were asked to insert the character *de* (的) wherever it felt most appropriate, while Tagalog speakers were encouraged to add the word *na* or the suffix *–ng* in order to respond with the most grammatically appropriate phrasing. Similarly, if Polish participants felt an alternative morphological form were necessary, this was also encouraged, although no participants felt this need.

The adjective combinations included in this project were chosen with a view to gaining as much information as logistically possible on how each of the languages organises noun phrases with complex modification strings. There were four phrases with two adjectives, three phrases with three adjectives, two with four and one with five. The shorter phrases were placed at the start of the questionnaire so that participants were familiar with the exercise by the time they were asked to provide more difficult judgements on longer and more complex phrases. I wanted to investigate as many combinations of different sub-types of adjective as possible, including combinations of adjectives with different morphological properties (as discussed by Coates 1977: 12, see *Chapter 4*) such as verbal participial adjectives and lexemes from each of Bache's (1978) three zones of modification. I was also able to investigate semantic-based orderings, which was particularly relevant in the longer strings of modifiers toward the end of the questionnaire.

3.3 **Sampling**

The participants who took part in my study come from a variety of backgrounds; the only restriction made was that speakers were native speakers of the language and literate in English. All participants would need to read and understand a questionnaire and make grammaticality judgements based on their own native intuition. Adjective ordering was not considered to be a feature which would be subject to complex sociolinguistic variation. No study discussed in this document finds evidence that adjective order is affected by the gender, age, social class or any other aspect of participants' identity, and any sociolinguistic variation in the spread and usage of this phenomenon would have to be part of any post-doctoral extension to this project.

For my English data, the sample was taken exclusively from Edge Hill University students, most (but not all of whom) were aged between 18 and 25. This was a convenience sample, and involved additional ethical considerations due to the fact that all those who took part were labelled as vulnerable participants due to being students whom I teach at the university (this is discussed in more detail in *2.3*). For my Welsh data, participants were interviewed in Aberystwyth as this is a town with a strong Welsh-speaking population (2011 Census figures) and I had been able to make contacts at the University of Aberystwyth and the National Library of Wales. These contacts put me in touch with possible participants who were chosen using what might be considered to some extent a random sample (Llamas et al 2007: 13), although all were either staff or students at the University of Aberystwyth or visiting the National Library of Wales. Some of the participants at the library were lexicographers and gave quite detailed reflections in the qualitative section of the questionnaire.

The sample of Northern Sotho speakers was predominantly made up of English teachers or students, with a broad spread of age groups and genders taking part. Interviews were conducted with 30 participants in Southern Limpopo in Jane Furse, Phaahla, Mamone, Ga-Masemola, Praktiseer, Lebowakgomo, Polokwane and Mankweng. Although this represents a geographical spread of around 150km, all the respondents spoke the Sepedi dialect of the language, and grew up in the same region of Sekhukhuneland. All participants in the sample were teachers, curriculum advisers, retired teachers, or university lecturers or students who grew up in the Sekhukhune area. Although the demographic spread is quite different from that of my English participants, this was not considered a major issue as the phenomenon of adjective stacking was not expected to be susceptible to significant sociolinguistic variation. Dimmendaal (2001: 61) suggests the ideal informant is one who 'not only speaks the language one intends to investigate but also has intuitions about its structure and enjoys talking about it', as well as being 'someone of good social standing in

a community'. My chosen sample would seem to be a perfect fit with this manner of specification, and meant that I could be confident that all participants had a high degree of literacy.

The Polish and Chinese speakers who took part in my study were either students or staff at Edge Hill University and the Tagalog speakers were invited to take part through a local catholic church in Burnley; all these participants were nurses from the local hospital. These participants were accessed through a variety of methods. Chinese and Polish speakers were invited to take part in the project through Edge Hill University and responded to an invitation email forwarded by Academic Registry. All were students apart from a small number of Polish speakers who completed electronic submissions and were accessed via the friend-of-a-friend technique (Milroy 1980) through a participant who invited them to take part. Each of these participants worked in the NHS with my participant, and was a native speaker of Polish. While there were no speakers of Tagalog at the university, I was able to make contact with a group of Filipinos in Burnley, who volunteered to take part when they were promoting a charity appeal. I was able to make a small donation to their fundraising as a mark of gratitude for their time.

3.4 **Ethical Considerations**

Bowern (2008: 9) observes that 'the differences in field sites in various parts of the world probably dwarf the differences between intra-linguistic methods'. This comment epitomises the major ethical concern of this project; not only are there standard universal ethical considerations to take into account, but I also needed to consider that when interviewing speakers from different cultures and ethnic backgrounds, there will be differences in what is expected from me as a researcher. How one conducts one's research in the field is particularly important in generating a positive relationship with participants. As well as planning as efficiently as possible, I have also taken advice during my data collection from members of the cultures in which I am working, as well as gaining ethical clearance from the Research Ethics Committee at my institution.

Bowern (2008: 91) goes on to note that 'part of respecting your consultants is taking into account how they interact with you', and I made sure that in all cases, I was conscious of how my participants were reacting to me (and to other participants) and did all that I could to ensure that they felt comfortable and confident in my attitude towards them. This included learning some phrases in each language so that I could respect my participants by demonstrating an enthusiasm for and dedicated interest in their language.

Throughout the data collection in my project, I obtained ethical clearance from my institution separately for each language. In all my research, a standard structure was used for my questionnaire which was approved by the Edge Hill University Research Ethics Committee as being non-invasive, clear and appropriate in content and length. I obtained informed consent from all participants and provided each with a unique participant reference number, which began in each case with a letter indicating the language (W= Welsh), followed by a three digit number which identified which questionnaire they completed. This allowed participants to remain anonymous and provided them with a means of withdrawing their consent by a date stipulated on the information sheet. These forms were included within the questionnaires, which are included in the appendices (A2-A7).

When conducting fieldwork on Welsh adjectives, it was important to follow the guidelines on bilingual policy provided by the *Welsh Assembly* in the *Welsh Language Act* (1993) and produce a questionnaire which was presented in both English and Welsh. This questionnaire (included in *appendix A4*) was produced with the help of my contact at the University of Wales, assured that my ethical responsibilities were observed and demonstrated my respect for the Welsh language.

For my English data, all participants were labelled as vulnerable due to being students of the researcher. It was made explicit that participation was voluntary and anonymous and a drop-box was made available in the departmental office so that it was in no way possible for me to know which students had taken part or otherwise. For this part of my research, it was agreed that compensation for participation was not feasible and, due to the complete anonymity of the process, even small tokens of appreciation were not appropriate.

Sakel and Everett (2012: 73) note that research participants who provide data in 'shorter sessions', might be more appropriately compensated through the offering of 'small presents'. Bowern (2008: 162) suggests, however, that in many situations it may not be appropriate to pay people in money but that 'you should still give something back' as a token of your appreciation and a formalisation of the relationship between researcher and participants. In this case, as students were all studying English Language, I was able to discuss my work with them and offered to provide copies of my work to any student who wished to further investigate this area of study.

For my fieldwork in Northern Sotho, all participants were given a pen or pencil bearing the Edge Hill University logo; this proved extremely popular with participants who were surprised and pleased that a researcher from a university in England was so interested in their native language. One group of participants made it known the day before a meeting that they were expecting financial remuneration for their assistance; it was reiterated to them that their participation was voluntary

and that no payment could be made. An amicable and agreeable decision was made that they would not take part and replacement informants were arranged.

A particularly important ethical consideration when working in South Africa was the compensation of my local research assistant from the University of South Africa. Sakel and Everett (2012: 72) outline the pragmatics of arranging for payment and suggest that such processes should be regulated through the institution providing the research. This procedure was facilitated through the relevant departments in my institution and an appropriate fee was negotiated and agreed upon with my assistant. This ensured that a professional and mutually-appreciative relationship was created and maintained throughout my field trip.

4 The Adjective Class in English

4.0 Introduction

The adjective class in English is one which is complex and relatively uncontested. In this chapter, I will attempt to characterise the class as fully as possible, as well as to provide an indicative discussion of the various divisions of the adjective category into distinctive sub-groups or lexical sets. In 4.1, I provide an outline of the adjective class in English, in which I outline the variation in the morphosyntactic behaviour and properties of English adjectives and comment upon methods of distinguishing them from nouns and verbs. In 4.2, I discuss how adjectives can and have been subclassified into lexical and semantic sets according to various criteria. In 4.3, I consider the different attempts which have been made to explain and predict the ordering in English PNPs based on the semantics and grammatical function of modifiers as well as on the context of the utterance as a whole. In 4.4, I offer some summary remarks and suggest how the content of this chapter relates to Chapter 5, in which I present and analyse my data.

4.1 Identification and Morphosyntax

It has long been agreed that adjectives constitute a distinct class in English (Jesperson 1918, Quirk et al 1978 & 1985, Huddleston & Pullum 2002, Nelson 2001) with a wide variety of properties which mark it out as being different from nouns and verbs. Whilst nouns and verbs are relatively easy to characterise in terms of their syntactic and semantic properties, the adjective class is somewhat more complex and varied on both of these levels. Quirk et al (1985: 233) suggest that there are four primary criteria for the adjective class, noting that syntactically, it can function attributively and 'can freely occur in predicative function'. Morphosyntactic properties typical of adjectives include comparison, intensification by adverbs of extent such as *very*, and that they can function as head of a noun phrase. They also observe that not all words considered to be adjectives have all of these properties, and that the properties of comparison and intensification usually co-occur. Adjectives which can be compared and/or intensified are referred to as gradable adjectives.

This final property is most interesting when considered in typological perspective. Dixon (2004: 15) notes that the adjective class can be recognised in different languages as being 'noun-like' or 'non-noun like'. A property of English adjectives as explained by Quirk et al (1985: 421) is that they can function as head of a noun phrase, in sentences such as:

37. the *elderly* are susceptible to the *cold*

Denison (1997: 26) notes that adjectives can seem to function as head of a noun phrase, but does so tentatively, suggesting that ellipsis of a 'presumed nominal head' is often seen as the explanation for this placement. He also observes that 'adjectives acting as NP heads have been almost exclusively plural generics' (as in *elderly)* but with very occasional usage denoting singular individuals, such as *the deceased, the Almighty* and *the accused*. These terms can be singular or plural (though Almighty is almost exclusively singular), but are generally used to identify a specific head or heads. Jespersen (1913: 232) considers that *the dead* is acceptable as a similar form denoting a singular specific referent. At the time of writing, Jespersen considered this usage fairly archaic but a century on, this term is said to be 'long departed' (Denison 1997: 26).

It is logical to explain this phenomenon as a functional shift, with the adjectives *cold* and *elderly* being nominalised to refer to abstract (*the cold*) and concrete (*the elderly*) entities respectively. It is also reasonable to suggest that this is a form of grammatical elision, in which the head nouns *people* and *weather/ temperature* are omitted due to being implicit. Both of these explanations are problematic in that they do not account for the range of syntactic behaviour of these constructions. Neither of these adjective heads can be pluralised and both would seem awkward when used with a zero-determiner, indefinite article or other determiners, or in the genitive case. Note that the adjective *cold* sounds almost acceptable in the final example (although *coldness* would seem a more realistic choice), but changes meaning to 'the common cold' when use with other determiners:

38. *an elderly is most susceptible to a cold

39. *some elderly/ elderlies are most susceptible to many colds

40. *the elderly's problem is that they are more susceptible to cold's effects

41. *elderly are most susceptible to cold

While Stern (1931: 167) and Ponsford et al (2010) note that adjectives such as *elderly* above, are often considered to have shifted or broadened their function to being nouns, this is less the case for other adjectives such as *tall,* which can equally function as NP head. Many central adjectives can function as apparent NP heads in phrases such as *the tall, the angry, the broken* and *the sick,* often with a strong suggestion of an elided head.

In many languages, such as Northern Sotho (Van Wyk 1969; Lombard 1985), adjectives are referred to as a subclass of nouns due to their ability to function as head in noun phrases, yet most adjectives

in English can be used as NP heads if the noun they are modifying is seen to be implicit. In Northern Sotho, the presence of noun class prefixes on adjectives makes the nature of the implied/elided head even more explicit, in that *mogolo* 'big' and *segolo* 'big' can be distinguished between referring to people (*mo-* is a class 1 prefix) and objects (*se-* is class 6). This feature is discussed more in Chapter 5.

Gradability is a feature proposed by Dixon (2004: 15) as a key criterion in recognising an adjective class in languages with 'subtle' adjective classes which seem to be nominal or verbal subsets. Dixon talks about adjectives as being a 'parameter for comparison', Paradis (2001: 2) calls gradability 'a basic characteristic of adjectives' and Bochnak (2010: 2) characterises gradability as being 'associated with scales, which are formalized as ordered sets of degrees along some dimension'. This is to say that gradability involves placing an object on a scale which represents the extent to which it possesses a particular quality. It is evident from a cursory examination that gradability is not just a property of adjectives, but also of some nouns and verbs:

42. Paul is *taller* than John
43. Mike is *the shortest* of the three
44. Paul *runs more* than John
45. Mike *runs the least* of the three
46. Paul is *more of* an athlete than Mike
47. Mike is *less of* an athlete than John

From these six sentences, we can see that the scale at which one runs or how much of an athlete a person is can be compared in a similar way to the quality of being tall or short, with positive and negative extremes at each end of the scale. Trask (1995: 55) describes these extremes as 'graded antonyms', which have 'a range of possibilities' lying between them:

WORD	NEGATIVE				POSITIVE
VERB	*Doesn't run*	MIKE	JOHN	PAUL	*Runs*
NOUN	*Isn't an athlete*	MIKE	JOHN	PAUL	*Is an athlete*
ADJECTIVE	*Short*	MIKE	JOHN	PAUL	*Tall*

Table 4.1: Graded Antonymy Across Grammatical Categories

Bochnak (2010: 1) refers to this cross-categorial feature of comparison as 'scalar modification', suggesting that this semantic feature is extendable across all three word-classes. He focusses on the scalar modifier 'half-' as an indicator of this, with phrases such as 'half-full', 'half-moon' and 'half-baked' illustrating the transposable nature of scales. Paradis (2001) however, refers to this phenomenon as 'boundedness', suggesting that 'conceptualization according to the presence or absence of boundaries seems to be a pervasive characteristic of human cognition'. Paradis suggests that 'boundedness in adjectives is a fundamental characteristic associated with gradability' and that in nouns and verbs it is equivalently 'a feature of countability and aktionsart respectively'. Gradability is often seen as a factor influencing adjective order, as will be discussed in *3.3*.

The verb class is often separated into terms which are stative or dynamic, according to whether the notion they represent refers to a semi-permanent state or process such as knowing, being, or understanding, or whether the verb is one of action, referring to a more temporary and transitory procedure such as running or singing. This distinction essentially divides the verbal category into subclasses denoting performances and states. Adjectives are often, though not always, seen as possessing the same characteristics. Quirk et al (1985: 434) observe that adjectives are 'characteristically stative' but that many adjectives can be inherently dynamic, or can be 'used dynamically'. These adjectives are seen to 'denote qualities that are thought to be subject to the control of the possessor and hence can be restricted temporally'. This is to say that dynamic adjectives involve an idea of some kind of performance by the modified entity, rather than representing an inherent and permanent characteristic. Consider the difference between the following examples:

48. the *brown* cat
49. the *yawning* cat
50. the *sleepy* cat
51. the *naughty* cat

In these examples, the adjective *brown* denotes a permanent property of the cat, while the participle *yawning* refers to a more temporary characteristic. The other two adjectives could be seen to refer to a temporary state of being tired of badly-behaved, or could suggest a more typical behavioural characteristic of the cat, depending on context. As Quirk et al (*ibid*) suggest, 'we are dealing with scales, rather than a feature which is present or absent'. Whilst *brown* denotes a fixed and permanent characteristic of a noun, it is important to note that relatively few adjectivess suggest a permanence of the same degree. Even size adjectives such as in *the big cat* are not

completely permanent as the cat has presumably not been big for the entire duration of its life. As the terms 'dynamic' and 'stative' tend to refer more exclusively to adverbial realisations of adjectives, I will be avoiding these terms in my analysis and will instead choose Quirk et al's (1985: 1242) terms 'permanent' and 'temporary' to refer to adjectives according to how transient or fixed the property they represent might be. I would, however, retain Quirk et al's caveat that these are scalar notions, rather than being a binary distinction. In this sense, we can see adjectives as appearing somewhere along a permanence continuum:

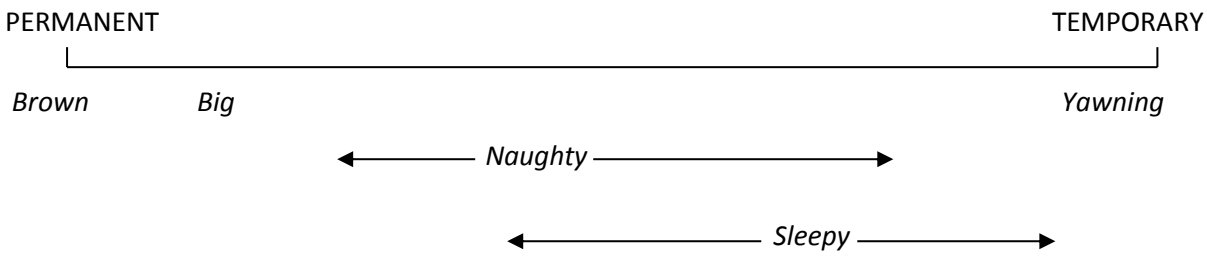


Figure 4.1: The Scale of Permanence of Adjectival Concepts

Givon (1970: 816) refers to these same qualities using a 'stative/active' distinction, with similar issues to those suggested of Quirk et al's 'stative/dynamic' description of adjectives. Givon, however, goes further than most in suggesting that 'English adjectives are not semantic primitives, but rather are semantically based upon or derived from nouns or verbs' (ibid). Whilst this is certainly the case with a large proportion of adjectives such as *political*, *hearable*, or even less noticeably derived forms such as *square*, it is difficult to deny that there is a core set of English adjectives which are not derived from other word classes (referred to here as 'overtly underived' adjectives). Givon does, however, acknowledge the methodological flaws in this argument, which essentially relies upon the fact that adjectives can generally be paraphrased and expressed exclusively through nominal or verbal structures. Whilst this claim is ultimately questionable, the link between adjectives and either a noun or a verb (or both) is one which is very relevant in the sequencing of adjectival strings, and indeed on the characterisation of the adjective class on a more universal level.

Huddleston (1988: 114) considers there to be a 'fuzzy borderline area between the two categories [verb and adjective]' and suggests that some participial adjectives lend themselves more readily to being categorised as adjectives (*broken*) and some more naturally as verbs (*heard*). Laskova (2007: 125) separates 'real verbal participles' from what she refers to as 'adjectival participles', citing various tests and methods of distinguishing between the two forms. These tests include whether or not the participle can follow stative verbs such as 'seems', 'looks' and 'remains', whether or not the participle can take the *un-* prefix, and whether the participle can take the degree modifiers 'more'

and ‘most’. These tests are exemplified in the following examples, and suggest that, according to Laskova’s criteria, *interesting* is an adjectival participle, while *singing* is a verbal participle:

51. this lesson seems interesting
    *the man seems singing

52. the uninteresting lesson was over
    *the unsinging man sat down

53. the most interesting lesson had begun
    *the most singing man sat down

Laskova’s (2007: 128) rationale for distinguishing between these two forms is that the adjectival ‘prefix [*un*] should be distinguished from the verbal prefix *un* which has a ‘reversative’ meaning’. The suggestion here is that the adjectival prefix *un-X*, meaning ‘not possessing quality X’ is distinct from the ‘reversative’ verbal prefix *un.* Whilst this is undoubtedly true on a semantic level, it seems problematic to make this the basis of an argument concerning grammatical word class; in a phrase such as *an untied knot*, both of these readings are possible.

Whilst Laskova’s argument for prenominal participles to be seen exclusively as being ‘verbal’ in nature is not completely accurate, what can be taken from this analysis is that participle adjectives vary in how closely they are linked to the verb from which they derive. Adjectives such as *loving, interesting, rotten, disgusting* and *dejected* are all virtually divorced from their original verbal roots, with strong ‘adjectival’ qualities referring to physical and emotional states, while participles such as *the running man, the singing bird* and *the defeated boxer* are more closely related to actions which are either currently in progress or recently completed. These participle forms can be placed on a scale with ‘adjective’ at one end and ‘verb’ at the other:

ADJECTIVE			VERB
Jaded	*Loving*	*Peeling*	*Dancing*
Tired	*Broken*	*Growing*	*Punched*
Interesting	*Exhausted*	*Used*	*Juggling*

Figure 4.2: Adjectival-Verbal Continuum for Participial Adjectives

Many attempts have been made to characterise and restrict the potential of participles used prenominally, with comparisons often made to postnominal participles. Desurmont (2007: 6)

provides a good critique of Dirven's (1999: 62) explanation of this feature, in which Dirven claims that all participles can be used postnominally but that only some can be used prenominally. Desurmont suggests that participial adjectives used prenominally often have a more adjectival interpretation than when used postnominally, citing *withdrawn* as an example (2007: 6). Quirk et al (1985: 415) observe that some participial adjectives have different meanings to their corresponding verb forms, citing *calculating* and *relieved* as examples. For participle forms which are ambiguous as to whether they refer to reduced relative clauses or as participles functioning as head in non-finite verb groups, they suggest potential for intensification as a test for 'full adjective status' (*ibid*: 415). This is to suggest that the grammaticality of *a very interesting book* makes *interesting* a 'full adjective', while the relative ungrammaticality of *a very crying child* marks out *crying* as less of an adjective.

Alexander (1988: 113) explains the phenomenon of participial adjectives by suggesting that 'participles can be used as adjectives'. Though fairly simplistic, it is this explanation which I will observe when studying participles within adjective strings. Without making a judgement on whether participles as modifiers can always be considered 'adjectives', I will refer to them as such for ease of expression. Quirk et al's (1985: 413) term 'participial adjectives' will be adopted for all such structures, regardless of where they appear along the scale in *Figure 4.2*.

4.2 **Sub-classification into Functional/Semantic Sets**

As mentioned in 3.3, Whorf (1937 [1956] in 1956: 83) suggests that 'English adjectives belong to cryptotypes having definite position assignments', and claims that these cryptotypes have 'subclasses' (*Ibid*: 93) of their own. Whorf's suggestion that adjectives can be divided into recognisable subsets based on the semantic properties members of a set share is one which is shared by many theorists who have conducted work in this area. Dixon (2004: 2) recognises that adjectives can be divided up into subsets according to 'prototypical grammatical functions' or on 'a prototypical conceptual basis'. This is to say that adjectives can be categorised according to semantic criteria (i.e. into groups which denote a particular set of meanings) or according to functional criteria (i.e. into groups which modify a noun in a particular way). Of these two methods of categorisation, there has been considerably more work done on the semantic side than on the functional, although the best explanations consider both aspects. In this section, I will briefly summarise the main attempts to divide the adjective class into subsets according to these criteria, before moving on to how they have been used to explain and predict the order of multiple adjectives in 4.3.

Lester and Beason (2005: 229) observe that 'there are different categories of adjectives depending on the type of description they give', and provide a basic taxonomy based predominantly on semantic criteria, dividing adjectives into the categories of 'general', 'age', 'colour' and 'nationality/origin'. Leech et al (1982:47) divide adjectives up into meanings of 'physical qualities' (*green, large*), 'psychological qualities' (*funny, brave*) and 'evaluative qualities' (*foolish, beautiful*), whilst Thorne (2012: 14) separates adjectives of 'physical detail' (*glossy*) from those of 'character' (*aloof*), 'atmosphere' (*gloomy*), 'emotion' (*ghastly*) and 'factual information' (*financial*). The table below illustrates the most common semantic subclasses of English adjectives:

(Det)	(Size)	(shape)	(age)	(colour)	(nationality)	(head)
The	small	round	ancient	brown	Chinese	table
A	long	bendy		dark	Cumbrian	road
	Tall		young		Russian	women
This	big		old	red	Scottish	hat

Table 4.2: Common Semantic Subsets of Adjectives

This kind of categorisation of adjectives along semantic lines is common across most English language textbooks (Alexander 1988, Sinclair 1991, Spankie 1987, Thompson & Martinet 1960), with size, shape, age, colour and nationality the most common subsets being proposed. Adjectives denoting other qualities such as evaluation, emotion and atmosphere are often referred to as general descriptives of some kind. Thorne's 'factual information' is often classed under the heading of 'noun' or 'derived'. Most authors, including Quirk et al (1985) and Dixon (1982) propose a semantic sub-categorisation of adjectives with a view to developing a basic order theory, which is discussed in more detail in 4.3.2. I use the term 'order theory' here to refer to any critical explanation of the ordering of adjectives within a modification string.

Adjectives can also be categorised according to various functions played by members of a particular category. Quirk et al (1985: 429) label adjectives according to what they do to the modified head, with categories such as 'restrictive adjectives' (the *exact* answer), 'amplifiers' (*plain* nonsense), 'emphasizers' (a *true* scholar) and 'downtoners' (a *slight* effort), grouping the final three under the moniker of 'intensifying adjectives'. Whilst there is a strong semantic element in this taxonomy, this does not relate specifically to the inherent meaning of the adjective in isolation, but rather to the collective meaning of the adjective-noun combination.

Bache (1978) explained the ordering of English adjectives based on dividing adjectives into different subsets according to a variety of criteria- semantic, functional, pragmatic and phonological- and attempted to provide a prescriptive order as to how important each of these criteria is.

Bache (*Ibid*: 26) divides pre-modifying adjectives into three 'zones of modficiation', according to where they can fall in relation to broken sequences within a string of adjectives. Adjectives in the second or middle zone are known as Mod-II adjectives, typically function in parataxis and can be separated by commas or *and*. Adjectives in the first and third modification zones work in hypotactic relation with a broken sequence, with Mod-I adjectives capable of preceding a broken sequence and Mod-III adjectives coming between a broken sequence and the head. Bache identified particular, distinctive characteristics of adjectives which appear in each of these functional zones, with syntactic, functional and semantic properties observed for each.

Mod-I adjectives such as *former* and *utter* generally 'define or specify' (*Ibid*: 32) the head, and include items such as numerals (first, three) and post-determiners (only) often not considered members of the adjective class. Mod-I adjectives cannot usually appear predicatively or in parataxis with Mod-II adjectives and cannot be intensified. Mod-II adjectives such as *happy* and *big* generally 'describe or characterize' (*Ibid*: 34), and include most adjectives typically considered by theorists as central adjectives. These are the most 'core' adjectival concepts and include most of the semantic classes referred to by theorists outlined above. They can be compared, intensified and can appear predicatively. Bache notes that Mod-II adjectives are quite mobile in functional terms and can often work as Mod-I or Mod-III adjectives if they are performing a function which is more complex than simply describing the head. Mod-III adjectives such as *political* and *African* typically 'categorize or classify' (*Ibid*: 37) the head noun and include adjectives derived from nouns and verbs, participial adjectives and noun modifiers. Mod-III adjectives are a bit like Mod-I adjectives syntactically in that they cannot usually be compared or intensified without a change in meaning to a more Mod-II interpretation (*a very political decision*). They cannot function in parataxis with Mod-II adjectives and 'lend themselves more readily to attribution than predication'.

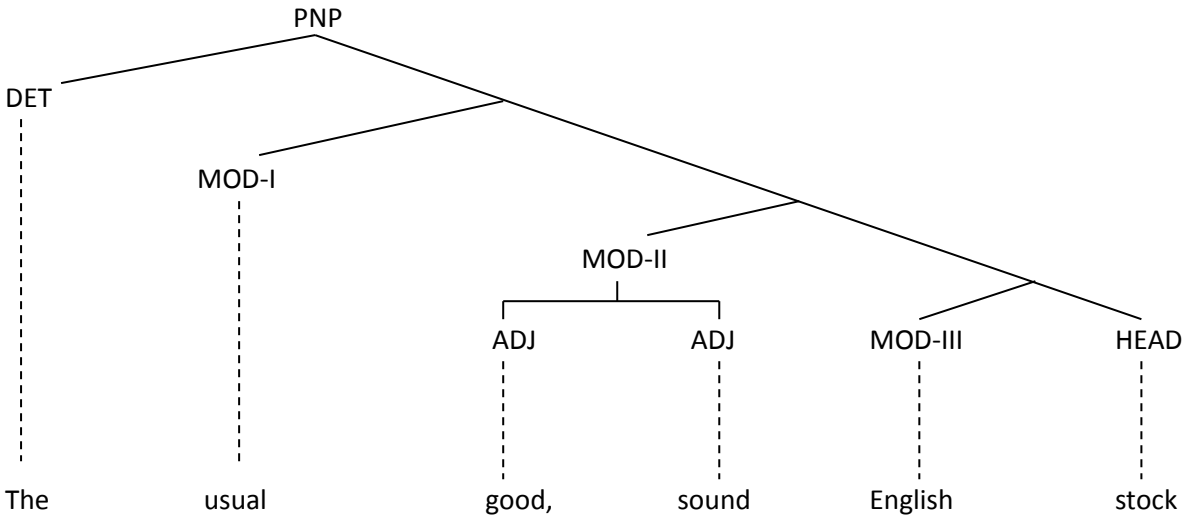


Figure 4.3 : Bache's (1978: 28) Modifications Zones

Warren (1984) investigates the variation in adjectives typically placed in Bache's Mod-III zone, referring to such items as 'classifying adjectives', which is also the title of her work. She focuses on 291 different adjectives, most of which are denominal forms or noun modifiers. Warren notes (1984: 103), like Bache (1978) that three different functional types of adjectives exist, labelling the other two zones as 'identifying adjectives' (Mod-I) and 'descriptive adjectives' (Mod-II). Adjectives in the Mod-III zone are sub-classified based on the origin of the derivation. Warren (1984) identifies the origin of derivations by paraphrasing each of the 291 denominal adjectives in her corpus using relative clauses. A variety of subclasses are proposed, including:

POSSESSION:	national assets-	assets belonging to the nation	(1984: 164)
COMPOSITION:	wooden box-	box made of wood	(1984: 133)
POSITION:	western adventures-	adventures located in the west	(1984: 186)
CAUSATION:	electric shock-	shock caused by electricity	(1984: 210)
PURPOSE:	educational facilities-	facilities used for education	(1984: 219)
RESEMBLANCE:	Roman nose-	a nose which looks like a Roman's	(1984: 225)

Warren (1984: 283) notes that morphological properties were often shared by adjectives with common derivational origins. She claims that certain orderings of strings of these different properties are common, but suggests that the sequence depends more on the 'classificatory strength' of each adjective in a string. The factors which govern the order of adjectives can be determined by the semantic content and function of a modifier within a noun phrase, as well as the context of the utterance; these features are discussed further in 4.3.

4.3 **Ordering of multiple adjectives**

Research into multiple adjective strings suggests that they are relatively rare and that there are pragmatic constraints on the number of adjectives which can appear in a string. Ferris (1993: 126) notes that there is 'evidence to suggest that they form around 5% to 7% of both attributive and ordinary predicative adjectival expressions in normal speech', but also suggests that syntactic order 'controls meanings and grammaticality in respect of the adjectival grammar of English' (1993: 187). Quirk et al (1985: 1338) suggest that 'although there is, theoretically, no grammatical upper limit to the number of premodifiers, it is unusual to find more than three or four'. Bache (1978: 11) claims that 'judging from common usage, there seems to be a limit of about six or seven adjectives, and most PNPs contain only two or three adjectives'. Coates (1977: 10) also considers seven to be a pragmatic limit, and found that 'sequences of two modifiers were far more common than sequences involving larger numbers'. Bache (1978: 12) suggests a need for 'scholarly attention' to the ordering in adjective strings, relating PNP structure to the concept of linguistic creativity. With such extensive and potentially complex strings of adjectives possible, he suggests that there is 'a large if not infinite number of possible ways to construct a PNP'.

Ghesquière (2009: 312) suggests that 'premodifiers display a fairly fixed linear order, which in many scholarly accounts is seen as a reflection of the diversified semantics of the various prenominal uses', while Halliday (1994: 187) claims that 'there is a progression in the nominal group from the element that has the greatest specifying potential to that which has the least'. Barber et al (1993: 21) suggest that 'there is a complicated set of rules regulating the way a phrase [containing multiple adjectives] is put together in English (rules which English speakers have obviously internalised).' The authors compare this to constituent order, with perhaps even greater salience than they intend, going on to say that 'the permissible arrangements of words and the meanings of particular arrangements vary from language to language'.

Whorf's (1937 in 1956: 93) observation, as discussed in 3.2 that the subclasses of English adjectives have 'definitive position assignments' backs up Barber et al's (1993) idea that there are rules which govern adjective sequencing in English. Teodorescu (2006: 1) suggests that prenominal adjectives in an English noun phrase are 'strictly ordered', and that the restrictions on ordering are 'still not very well understood'. In this section, an outline will be given of the varying methods by which theorists have attempted to explain and predict ordering of adjectives in English. In 4.3.1, I discuss order theories not based purely on semantics under the umbrella term of 'function-based theories', before discussing semantic-based order theories in *4.3.2* and context-based theory in *4.3.3.*

4.3.1 Based on Function

Halliday (1985: xiii) observes that 'everything that is said or written unfolds in some context of use', and claims that 'the fundamental components of meaning in language are functional components'. Halliday's functional approach to grammar supersedes semantic-based approaches to explaining adjective order as he suggests that the semantic content of a word is determined primarily by the function a word plays and the context in which it is used. He simplifies this idea by observing that 'each part is interpreted as functional with respect to the whole' (*Ibid*). An example of this is semantic variability of the adjective *little* across different functional contexts. Teyssier (1968: 233) notes this variable function of *little*, suggesting that 'when little is applied to people or objects that one does not normally consider as such, this adjective takes on a shade of emotional, diminutive connotation'. This is noticeable in the phrase *the stupid little man*, in which the head is modified by the adjective *little*, without any tangible comment on the size of the man. By moving this adjective of dimension to the end of the string, a more evaluative judgement is implied, while the reverse ordering of *the little stupid man* more overtly makes reference to the man's small size. It is clear here that the adjective plays a different role when its position is changed.

Leech et al (1982: 48) propose that 'adjectives move rather easily from one class to another, often with a subtle change in meaning', as reflected by the phrase *the stupid little man* above. Bache (1978: 16) observes that many strings are reversible, but that this change of sequence is sometimes 'associated with a definite semantic interpretation' (1978: 17). His example here is 'the brilliant first chapter', which contrasts semantically with 'the first brilliant chapter'. Ferris (1993: 127) labels distinctive modification patterns as 'Pattern I (PI)' and 'Pattern II (PII)', with PI ordering indicating that 'the adjectives each qualify the noun on an equal footing', while PII orderings involve a process whereby 'one of the adjectives forms an inner nucleus with the noun; this nucleus is then qualified, as if it were a single unit, by the 'outer' adjective'. In the case of *the brilliant first chapter*, the adjectives appear in PII, with the first adjective always modifying the combination of the second and the head. When *brilliant* appears in string-initial position, it refers to *the first chapter*, while if *first* appears at the head of the string, it refers to the first of the chapters which can be considered to be brilliant, which may or may not be *the first chapter*.

Muir (1972: 30) analyses the syntax of complex modification strings and suggests that 'the occurrence of various items is not random […] there are, in fact, discernible secondary structures [in the modifier slot]'. Muir divides these secondary structures into four groups; the 'deictic', with words functioning as determiners, the 'ordinal', with words functioning as numerals, the 'epithet',

with words functioning as adjectives, and the 'nominal' with words functioning as nouns. Muir's example of this was:

d	*o*	*e*	*n*
All the other	ten	very worn American	school books

Figure 4.4: Muir's (1972: 30) Secondary Structures

Muir is one of a number of theorists who explain sequencing within the noun phrase by dividing a lengthy sequence into ordered 'zones' based on what each modifier was doing to the noun. Bache's (1978) three-zone analysis of PNPs (as discussed in the previous section) remains as sound as any analysis to date, which suggests that strings of adjectives can be separated into functional zones of modification. It is the only monograph which is fully dedicated to such an analysis and provides a complex list of possible exceptions and the conditions under which variation is possible.

Coates (1977: 12) analyses complex modification strings in terms of the grammatical categories or 'word classes' of items within the string, differentiating between central adjectives, denominal adjectives, noun modifiers and participles. Coates observes (1977: 14) that 'if a sequence of modifiers involves words of different classes, then they cannot be co-ordinated'. This is to say that the relationship between words from different zones is typically one of hypotaxis, rather than parataxis (see also Bache 1978: 51). Coates (1977: 13) bases her observations on the ordering in PNPs primarily on the grammatical category of the word, but notes that this is an incomplete analysis of adjective order, explaining that 'word classes are not clear-cut entities'. Just as words may undergo functional shifts from one word class to another, so adjectives may be transferrable across different subsets, based on their order in a sequence.

Quirk et al (1985) discuss the ordering within noun phrases at great length, offering a detailed and varied description of the reasons adjectives are sequenced in a particular way. They base their observations on the semantic and functional properties of adjectives and identify a range of factors which contribute to potential orderings. They suggest that 'when there are two or more adjectives co-occurring in attributive position, the order of the adjectives is to a large extent determined by their semantic properties' (1985: 437). However, they also divide adjectives into four zones of modification, somewhat similar to Bache's three-zone model (1978). These zones are as follows:

PRECENTRAL	CENTRAL	POSTCENTRAL	PREHEAD
Peripheral, non-gradable adjectives, in particular intensifiers	The central adjectives i.e. the 'most adjectival' items	Participles and colour adjectives	The 'least adjectival and most nominal' items- denominal adjectives, nationality, noun modifiers
Certain, definite, sheer, complete	Hungry, ugly, funny, stupid, silent, rich	Retired, sleeping, red, pink, blue	Austrian, political, experimental, tidal

Table 4.3: Quirk et al's (1985: 1338) Zones

Quirk et al (1985: 1338) delimit the ordering of multiple adjectives within the central zone of modification according to morphology and semantics, suggesting that the 'usual order' of adjectives is non-derived forms followed by 'deverbal' forms, followed by denominal forms. An example they give of this ordering is 'a quiet satisfied sleepy look'. Whether or not *sleepy* is deverbal or denominal is questionable, but certainly, if this were changed to *a quiet satisfied hairy dog*, then this ordering would follow as being the most natural-sounding sequence. They also suggest a semantic ordering of 'SIZE, LENGTH and HEIGHT' normally preceding other non-derived adjectives (*ibid*).

Quirk et al (1985: 1339) also propose an idea, much in common with Bache's (1978) principle of emotional load, whereby it is possible to distinguish 'a group of emotive, evaluative and subjective adjectives (*lovely, nice, wonderful, terrible, horrible, nasty* etc*)* which usually precede other central adjectives'. In addition to foregrounding the emotional load of these adjectives, the authors also point out that these modifiers are often used with 'an adverbial, subordinated relation' to the following adjective(s), due to their similarity to adverbs ('the beautiful(ly) warm water).

Bache's (1978) principle of emotional load is one of four principles by which the author explains the ordering among adjectives modifying a noun. Bache explains the order in strings of Mod-I (pre-central) or Mod-III adjectives through his principles of specification and classification. He also proposes the principles of length and emotional load as playing a role in determining adjective order, particularly when other possibly more salient factors such as semantics and function are not relevant.

Although strings of Mod-I adjectives occurred in less than 1% of the PNPs in Bache's corpus, he concludes that the order of these adjectives will convey a 'degree of specification […] inversely proportionate to the closeness of adjectives to the head' (1978: 57). This is to say that the first adjective in a string of Mod-I adjectives specifies everything which follows it. This kind of viewpoint on the specifying nature of certain adjectives has received considerable attention from linguists including Paradis (2000), Sinclair (1991) and more recently Ghesquière (2009: 312), all of whom concur that each specifying adjective has a stronger force than that which follows it.

Dixon (1982: 24-5) labels Mod-I adjectives as 'pre-adjectival modifiers' and Mod-III adjectives as 'post-adjectival modifiers', and divides these further into subclasses according once again to semantic criteria. He observes, with some similarity to Bache's principle of specification (1978: 56), that Mod-I adjectives 'qualify everything that follows in the NP'. He divides these 'pre-adjectival modifiers' into 'logical qualifiers (all, some, etc.), determiners (the, this), possessives (my, John's), superlatives (best, cleverest), ordinal numbers (fourth), [and] cardinal numbers (four)', but does not prescribe an order for these items, rather limiting his discussion to the left-specified string mentioned above. Post-adjectival modifiers are said to consist of 'origin/composition - e.g. *oatmeal* in *oatmeal dog food* [and] purpose/beneficiary - *dog* in *oatmeal dog food*'.

Bache's principle of classification (1978: 55) is similar to the principle of specification and is the method by which Bache explains the ordering of a string of Mod-III adjectives. He explains that adjectives in this zone place the head into a subclass, with each additional modifier denoting a subclass of the modifier it precedes. Warren (1984: 284) explains that 'the more homogenous some entities are, the more likely we are to think of them as constituting a class of entities', and relates this observation to her suggestion that 'nationality adjectives generally have relatively weak classificatory strength'. In a phrase such as *African regional democratic candidates*, the nationality adjective *African* has the weakest classificatory strength due to the heterogeneity of its potential referents. The most homogenous grouping here is that delineated by the adjective *democratic*, and therefore it appears closest to the head. This kind of ordering is explained further by Warren (*Ibid*), who observes that 'the adjective closest to the head classifies, the adjective once removed from it sub-classifies'.

Levi (1975: 245) also considers the derivational source of derived classifying adjectives. She proposes that denominal adjectives tend to 'derive from the subject and object NPs of the underlying [sentence]'. Her example here is *senatorial industrial investigations,* in which she claims the order of preposed non-predicative adjectives must be subject-object. In this case, the underlying sentence is

senators investigated industry, in which the *senators* are the subject and *industry* the object. Levi (1975: 251) delimits the order of denominal adjectives within the Mod-III slot based on the function of each modifier. These slots depend upon how each denominal might be represented using a prepositional phrase such as *in the suburbs* (suburban), *for industry* (industrial) or *using electricity* (electric). The order of denominals as proposed by Levi is as follows:

In	Have	Use	For	Make, Cause	Head
Tropical				*Malarial*	*Mosquitoes*
Suburban		*Solar*			*Generators*
	Regional		*Avian*		*Sanctuaries*
Marine	*Vertebrate*				*Life*
		Electric	*Culinary*		*Appliances*
			Industrial	*Molecular*	*Chains*

Table 4.4: Levi's (1975) Taxonomy of Mod-III Adjectives

Warren (1984: 282-3) develops the proposals by Bache (1978) and Levy (1975) by discussing more overtly the concept of the 'classificatory strength' of classifying adjectives. She suggests that 'the greater the classificatory strength of a modifier, the greater our tendency to put it as close as possible to its head'. This is in keeping with Bache's principle of classification but builds on Levy's order theory by suggesting that 'if there is more than one classifying adjective, their order depends on their information value, i.e. the adjective with the lowest information value normally comes closest to the head'. She notes that phrases such as 'the surgical metallic clips' and 'the metallic surgical clips' are both equally viable and grammatical but depend on the order in which they are classified, an order which is reflected in a tonal stress upon the first adjective in the sequence.

Warren (1984: 285) suggests that this element of classification is not, as Bache (1978) suggests, restricted to the Mod-III zone but can also be transferable to descriptive adjectives, claiming 'if the adjectives in a phrase all have descriptive functions, they may in principle occur in any order. However, if there is a difference as to the degree of classificatory force, we prefer a sequence in which the item with the highest degree of classificatory potency comes closest to the head'. Warren exemplifies this concept with the phrase 'the beautiful red rose'; this normative ordering can be reversed to *the red beautiful rose*, but generally with a stress on the word *red*. This would indicate that *red* is being used here with a lower degree of classificatory force than beautiful, which is suggested in this sequence as being the most important quality of the rose.

Feist (2012: 37) argues that Mod-III adjectives (or classifiers, to use Feist's preferred term) exhibit a kind of 'dual semantic structure', which have a single, 'referential meaning' when used individually, but 'evoke a constructional grammatical meaning' when used in a phrase. This is noticeable in question 4 of the questionnaire discussed in Chapter 5, with the phrase *the classical American singer*. The denominal adjective *classical* has a referential meaning which suggests some inhabitation of traditional traits and tropes, but only takes on a constructional grammatical meaning when placed into a phrase. When placed before *American*, it suggests someone who sings in a style which is typical of what one would expect from an American singer, but when placed after *American*, it suggests someone who sings in a style typically associated with classical music. Similarly the function of *American* varies in these contexts between denoting nationality and referring to a singing style. This constructional grammatical meaning is dependent upon the order in which Mod-III adjectives are sequenced before a head.

Bache's (1978: 73) principle of emotional load states that 'Mod-II adjectives which typically assume emotional load such as *beautiful, wonderful, lovely, horrible, dreadful, nasty* etc., tend to precede other Mod-II adjectives'. This could be linked to the subjective-objective order proposed by such theorists as Whorf (1937 [1956] [1956]: 93), Bowers (1971) and Wulff (2003), as these adjectives denote strong subjective judgements and hence would be expected to typically appear early in a string of adjectives. Bache (1978: 74) notes that there is a 'dependency relation' between the two adjectives in sequences such as *the wonderful clean feeling*, in which the feeling is wonderful because it is clean. The term he uses to characterize this relationship is 'semi-adverbial function', an interpretation which is lost if the order of these modifiers is reversed.

Bache (1978: 83) notes that underived adjectives which do not carry emotional load precede unloaded deverbal adjectives, which in turn precede unloaded denominal adjectives, and proposes a brief semantic ordering for underived adjectives which is 'size > length > height > others'. Bache considers morphological form to be more significant in determining the ordering of Mod-II adjectives than semantic order, and suggests his 'principle of length' is most significant in determining ordering within strings of Mod-II adjectives with equal emotional load. He notes that the examples in his corpus demonstrate a pattern whereby, with overwhelming frequency, shorter adjectives precede longer adjectives. Bache supplies a graphic which illustrates the factors he considers relevant in explaining adjective order, and the relative salience of each, as exemplified in Figure 4.5:

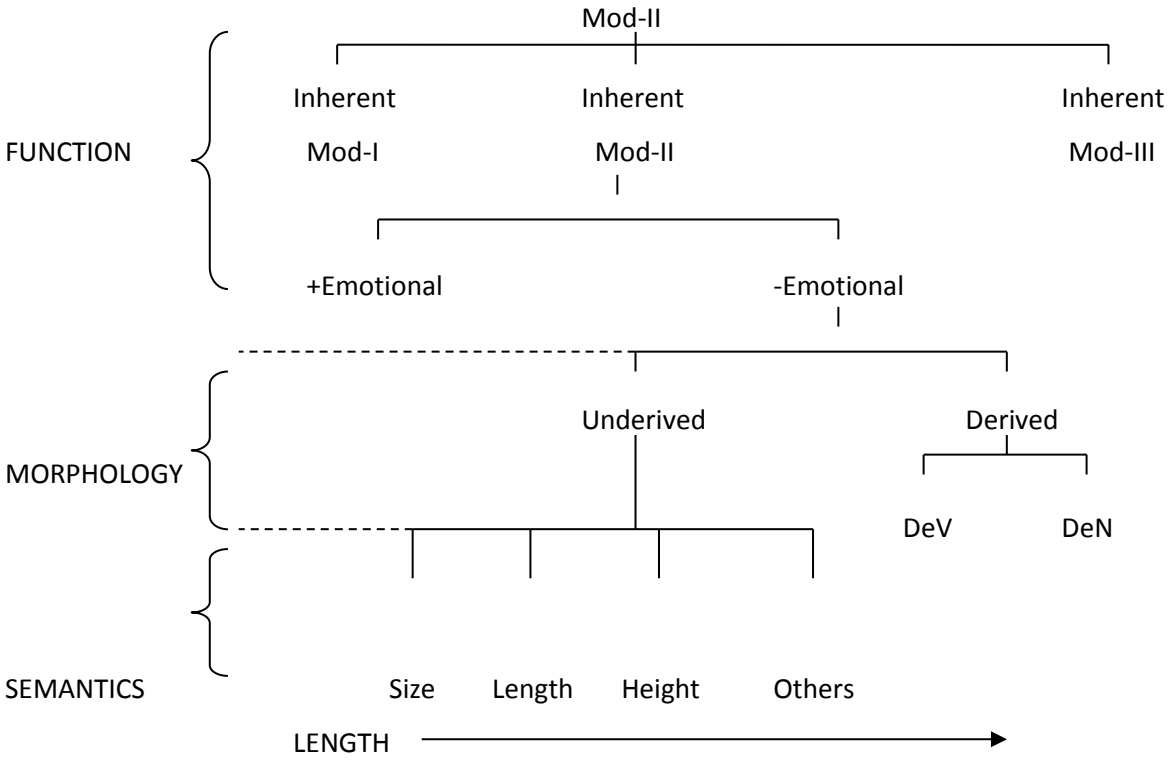


Figure 4.5: Bache's Functional Explanation of Mod-II Sequencing

Quirk et al (1985: 1239) also make observations about the functional nature of the modification provided by an adjective, claiming that modification can be restrictive or non-restrictive. A modifier is labelled as providing a restrictive function 'when the reference of the head is a member of a class which can be identified only through the modification supplied', while non-restrictive function is characterised by the provision of 'additional information which is not essential for identification'. While this duality of modification is more commonly associated with relative clauses, it also counts for modifiers:

54. RESTRICTIVE: *tall* goalkeepers are better than *short* goalkeepers

55. NON-RESTRICTIVE: a *tall*, *handsome* man entered the room

In the first example, the adjectives *tall* and *short* are both restricting the referent of the head and hence function in a similar way to Bache's (1978) Mod-I adjectives. As restrictive adjectives specify a noun as well as describing it, this places them in a position which could be seen to inhabit the borderline between Mod-I and Mod-II. Therefore, based on Bache's analysis of the ordering within PNPs, it is reasonable to hypothesise that restrictive adjectives will precede non-restrictive.

Perhaps the most detailed function-based explanation of adjective sequencing is that of Ghesquière (2009: 314) who proposes a very detailed model for determining the order of adjectives in which little or no importance is placed on the semantic content of adjectives, but more on the relationship between each modifier and its head. Ghesquière separates modification into determination, modification and categorization, before accounting for Mod-II ordering based on subjectivity:

Determination			Modification				Categorization	
			Strengthening		Descriptive			
Pre-Determiner	Primary Determiner	Secondary Determiner	Emphasiser	Intensifier	Subjective Descriptive Modifier	Objective Descriptive Modifier	Classifier	Head
all	*the*				*silly*			*clowns*
	those			*very*	*beautiful*	*little*		*flowers*
	the	*main*					*technical*	*problem*
			pure		*paranoid*			*fantasy*
Speech event-related meanings			Subjective meanings			Objective meanings		

Table 4.5: Ghesquière's (2009) Sequence Model

Functional order theories do not fully contradict semantic-based explanations of adjective ordering; in fact, most functional accounts of ordering incorporate an element of semantic-based sequencing at some point in their process. Trusswell (2009: 532) suggests that 'the whole project- reducing adjective restrictions and nominal morphosyntax and semantics to a single linear functional sequence- is problematic', and claims that his work 'disconfirms' popular semantic analyses by authors such as Cinque (1994) and Scott (2002). Whilst it is clear that semantic order typologies do not provide an exhaustive account for the variability of ordering of multiple adjective strings, it is also an indisputable fact that semantics plays a large part in accounting for this phenomenon.

4.3.2 Based on Semantics

Scott (2002: 92) suggests that 'stacked adjectival modification' is a much under-researched area, and outlines studies of the phenomenon which have produced a variety of different conclusions. He observes that theorists differ in their observations of 'just how many semantic categories of adjective there actually are', and points out that there is no general agreement between theorists on the ordering of such semantic categories. In this section, I will attempt to provide a balanced summary of the different taxonomies which have been proposed, from small, simplistic semantic groupings to much wider and more complex categorisations and approach the question of whether or not such an ordering might be considered a linguistic universal.

Wulff (2003: 246) acknowledges that there are many factors affecting the order of premodifying adjectives in English, citing phonological, semantic, syntactic, pragmatic and psycholinguistic variables as all having a degree of significance in this area. Based on a multifactorial investigation of multiple adjective sequencing, he concludes that semantic criteria are the most important when it comes to explaining the ordering of a sequence of adjectives. Teyssier (1968: 233) suggests that 'adjectives denoting essential qualities intrinsically part and parcel of the object being described tend to stand close to the noun whereas those denoting accidental and, so to speak 'existential' qualities are placed further from the noun'. This builds on the work of Whorf (1937 [1956] [1956]: 93) who suggests that adjectives denoting objective, inherent qualities are place further from the head than subjective, non-inherent adjectives.

Vendler (1968: 126) considers the semantic properties of adjectives as being almost completely determinant of their relative order within a modification string, suggesting that 'most strings require a specific order of succession among the members'. He cites examples including 'beautiful white wooden house', 'comfortable red chair' and 'big rectangular green Chinese carpet' as being evidence of relatively fixed orders where 'hardly any change in the order is possible'. While very few interpretations of adjective ordering conventions made since Vendler's comments are quite so categorical as his own, many analyses of the phenomenon involve semantic subclassification as a central feature in proposing a normative semantic-based ordering.

Dixon (1982: 15-6) proposes that 'those monomorphemic English forms which have basic membership of the part of speech Adjective [sic] can be classified into seven types on semantic, syntactic and morphological criteria'. He divides English central adjectives into subclasses based largely on semantic content, and considers variation between these classes in terms of a variety of different morphological, semantic and syntactic properties. Dixon does not discuss adjectives of

nationality or denominal and participial adjectives here, as the central members of such subclasses are not typically considered central adjectives, rather peripheral forms derived from nouns and verbs. He does, however, attest that his seven semantic types 'always follow [pre-adjectivals] and precede [post-adjectivals]', as outlined in the previous section.

The seven semantic subclasses proposed by Dixon (*Ibid*) are:

DIMENSION - *big, large, little, small; long, short; wide, narrow; thick, fat, thin*

PHYSICAL PROPERTY - *hard, soft; heavy, light; rough, smooth; hot, cold; sweet, sour*

COLOUR - *black, white, red*

HUMAN PROPENSITY- *jealous, happy, kind, clever, gay, cruel, rude, proud, wicked*

AGE - *new, young, old*

VALUE - *good, bad, proper, perfect, excellent, fine, poor*

SPEED - *fast, quick, slow*

Dixon considered the differing behaviour of these groups as being evidence to support his division. He notes that adjectives of dimension, age and speed constitute fairly small, closed classes, while colour and human propensity are much more susceptible to neologisms. As well as accounting for the varying semantic oppositions of antonymy, synonymy and hyponymy, Dixon considers the potential exhibited by each class to take derivations to illustrate negation (*unhappy*), downtoning (*reddish*), causative verb forms (*deepen*) and adverbs (*softly*). The order in which these subclasses are placed according to Dixon (1982: 17) is:

VALUE > DIMENSION > PHYSICAL PROPERTY > SPEED > HUMAN PROPENSITY > AGE > COLOUR

Dixon (1982: 24) claims that 'with normal stress and intonation there appears to be a single preferred left-to-right ordering between adjectives from the different semantic types' (see also Whorf 1956: 93 on this), claiming that non-preferred orderings can also be present when under the influence of 'comma disjuncture', or marked intonation placing emphasis on a particular adjective. He also notes that exceptions are often the result of 'fixed idiomatic collocations', with *the big bad wolf* and *a good little girl* being two examples of this feature which show contrasting semantic ordering of value and dimension adjectives. The orders which contradict Dixon's ordering are referred to as 'marked orders' and often involve semi-antonymic combinations such as *new* and

slow. Dixon (1982: 25) claims that there is no 'evidence for a basic underlying order within a type', and considers this as supportive of his claim that his seven semantic subclasses are accurate.

Goyvaerts (1968: 27) proposes a semantic order hierarchy based on eight different subclasses of attributive adjective, with 'quality' and 'size/length/shape' coming first, ahead of age, colour and nationality. Goyvaerts' sequence ends with 'gerund' followed by 'denominal' in sequence-final position, with these derived forms preceded directly by a semantic class he refers to as 'style'. Quirk and Greenbaum (1973: 404) suggest the order 'general > age > colour > participle > provenance > noun > denominal'. Alexander (1990: 86) provides a semantic-based order of 'opinion > size > age > shape > colour > origin/nationality > participle'. Bowers (1971) also suggests an order based on semantic categories, but also notes that levels of objectivity and phonological word length also play a role in determining order.

Scott (2002: 114) proposes perhaps the most complex and specific semantic ordering of multiple adjective strings, suggesting that 'there exists a tighter interaction between the syntactic and semantic components of the grammar than is usually thought'. He considers various semantic orderings proposed within the literature on the feature and suggests that the following structure can be proposed as a linear hierarchy for semantic sub-groups of adjectives:

DETERMINER > ORDINAL NUMBER > CARDINAL NUMBER > SUBJECTIVE COMMENT > EVIDENTIAL > SIZE > LENGTH > HEIGHT > SPEED > DEPTH > WIDTH > WEIGHT > TEMPERATURE > WETNESS > AGE > SHAPE > COLOUR > NATIONALITY/ORIGIN > MATERIAL > COMPOUND ELEMENT > HEAD

It would appear that, in being so exhaustive in his consideration of different semantic sub-groups, Scott is attempting to provide a categorical list which encompasses all potential strings of adjectives. There is considerable delimitation and specification within the area loosely referred to by many theorists (including Dixon 1982) as 'dimension', with no less than eight subclasses of this area offered. Interestingly, 'shape' is separated from the rest of these dimension subclasses by 'temperature', 'wetness' and 'age'. It seems problematic to subcategorise the semantic area of dimension so methodically, yet to leave an equally if not more comprehensive and variable area as 'subjective comment' undivided.

Quirk et al (1985: 1339) warn that semantic-based order theories for central adjectives should be considered 'tendencies rather than absolute rules', and note that context and stress play a considerable role in determining preferred orders. The only observations made about the order within the pre-head zone are that noun modifiers tend to come closest to the head and denominals

of place and time (*local*, *annual*) tend to precede other denominals. Quirk et al (*Ibid*) suggest that colour terms and participles have variable order within the postcentral zone (as discussed in the previous section). I would consider the inclusion of participles within this zone to be problematic, with their positioning much more variable than suggested (a proposition I investigate further in Chapter 5).

Of all the semantic subclasses of adjective, Wyler (1989: 211) considers colour the most interesting. He suggests that colour adjectives 'are more flexible in their ordering [than often suggested] even if not in stressed or marked position'. Wyler concurs with psycholinguistic explanations such as those outlined below (Belke 2006; Sproat and Shih 1988), agreeing that colour terms usually appear close to the head due to their independence from comparison and context (1988: 213). He does, however, suggest that colour terms are particularly susceptible to Posner's Specification Principle (1982: 77), which extends Bache's principle of specification beyond the first zone of modification. He suggests 'a white, large round table' as presenting *white* in a non-normative position due to its function as referring to a table which is essentially large and round, but more notionally and insignificantly white.

Choi (1987: 70) tests out Bache's (1978) work on English adjective order and largely agrees with his conclusions, with one particular comment made in addition to Bache's work. Choi feels that adjectives in the Mod-II zone 'have a habitual order which is governed by the principle of subjective-objective comparison'. This is to say that adjectives which denote a more objective quality are placed closer to the noun than those which are subjective. This argument has much in common with Whorf (1937 [1956] in Carroll 1956: 93) and Bowers (1971), both of whom suggest that subjective comments such as *beautiful* typically precede more objective properties of a noun, such as *tall*. This also links in with cognitive and psycholinguistic explanations of adjective order, in which many theorists have suggested that ordering among premodifying adjectives is associated with the order in which qualities are perceived by a speaker.

Sproat and Shih (1988: 467) compare adjective strings in English and Mandarin and argue for a universal cognitive explanation of semantic-based adjective orders. They suggest that some properties are more 'apparent' than others and hence appear closer to the noun. Their example of this is that establishing whether a car is large involves a more complex cognitive process than establishing if it is red, because:

> 'to establish that a car is large […] one has to establish that the item is large for such items. Since [this] computation involves *comparisons* with other items, it apparently involves more *computations* than the computation of colour'.

Belke (2006: 261) supports this suggestion, suggesting 'the dimensions which are easiest to detect (e.g. absolute dimensions) are commonly placed closer to the noun than other dimensions (e.g. relative dimensions)' and believes that 'prenominal adjective ordering rules are a result of the perceptual analysis processes underlying the evaluation of distinctive target features'. In order to test this claim, Belke developed a series of 'referential communication tasks' in which she was able to investigate what she refers to as a 'canonical order effect'. This involved showing participants a number of shapes of varying size, shape and colour and considering the order in which participants chose to group these shapes according to each distinctive property. She concludes (2006: 264) that 'the more absolute, intrinsic and definite a dimension is, the closer it will be placed to the noun'. There may be some weight to the suggestion that cognitive processes affect the ordering of multiple adjectives but this theory seems limited to a certain 'spontaneous' register of language and is very difficult to prove empirically. In the questionnaire in Chapter 5, participants are asked to consider what factors they think lead them to ordering modifiers in a particular sequence.

Of all the various semantic orders proposed by theorists, not all of which have been discussed explicitly here, there seem to be a number of common assumptions. Adjectives denoting size or dimension tend to precede adjectives of age, with colour and nationality following in sequence, and derived forms tending to fall closer to the noun. On reflection, it seems that the more detailed a semantic-based order becomes in terms of the delimitation of semantic subclasses, the more problematic it can become. While semantic-based order theories should not be considered independently from a recognition that there are other pragmatic factors which govern the syntax of modification strings, it is hard to deny that, as Quirk et al (1985: 437) suggest, 'the order of the adjectives is to a large extent determined by their semantic properties'.

4.3.3 Based on Context

Most work on adjective ordering is accompanied by the recognition that, although various trends in sequencing exist, orders are often dependent upon factors above the level of the sentence. While the unmarked order of a string of adjectives can be predicted with a high degree of accuracy by sequencing them according to membership of functional or semantic subsets, the order in which those adjectives may appear in natural, spontaneous language can only be predicted if the context of an utterance is specified. While the order in some strings of adjectives can be reversible (Bache 1978: 16) without any notable change in semantics or force, changing what might seem an unmarked order can often change the emphasis, meaning or syntactic structure of a phrase. Consider the following examples:

56. a. the hot white boiling water
    b. the boiling hot white water
    c. the white hot boiling water

The template sentence above includes three adjectives of what seem to be three very different semantic sets; 'hot' is an adjective denoting temperature or state, *white* indicates colour, and *boiling* is a participial adjective, which can also denote temperature. The adjective *hot* cannot usually mean anything in this sequence but its core meaning denoting a high temperature, but the other two adjectives can have different meanings dependent on where they are placed in the sequence. If either precedes the word *hot*, it becomes difficult to see them as a modifier of *water*, with a more logical interpretation being that they are operating in submodification, as intensifiers of *hot*:

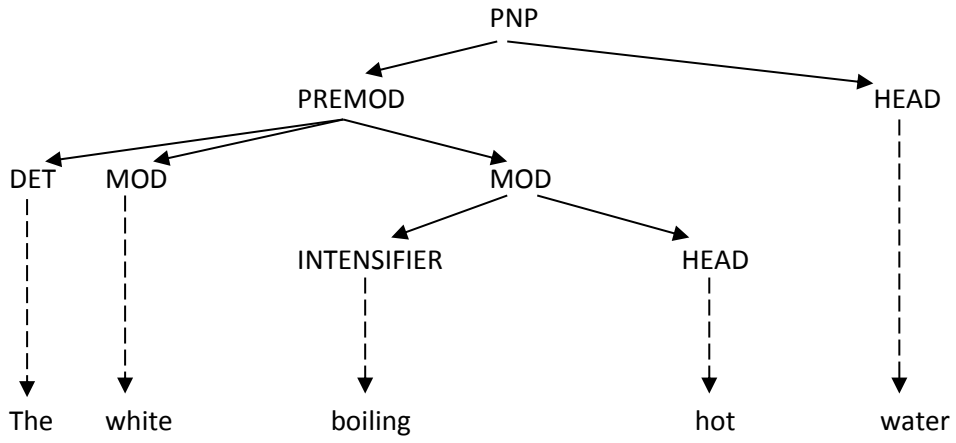


Figure 4.6: Multi-functionality of Adjectives in Distinctive Reversible Order

Quirk et al (1985: 1341) also note that ordering among modifiers is not always explicable based on the semantic or functional types denoted by each adjective when considered in isolation. They suggest that 'in part, the preferences seem clearly to correspond to the 'natural' order of recursive qualification', which sometimes 'reflect the non-linguistic world'. They compare the noun phrases 'the beautiful long hair' with 'the long straight hair', suggesting that a speaker might utter the first sequence due to a suggestion that hair is beautiful *because* it is long, while the same judgement is not made of the latter. This is in turn compared to 'the typical large country house', with this house being typical because of its size, rather than any other feature. This is a concept which I investigate in Chapter 5.

Herdan and Sharvit (2006: 26) consider the concept of the 'non-definite superlative', in which they remark that 'the superlative morpheme sometimes appears to have wide scope'. In this observation, it is apparent that the meaning and function of an adjective is determined to a large extent by the context in which it is used. Greenberg and Srinivasan (2003: 1) explain this concept, suggesting 'there are some cases where multiple orderings are not only legitimate, but carry different semantic content', offering *'average seven-day cost'* as an example of this. This builds upon Bache's (1978) notion of distinctive reversible orders, as they suggest that 'there cannot always exist a single correct ordering when taken out of context'. Champollion (2006: 2) considers the example 'my class has a shortest Italian student'. In this utterance, the order of modifiers is determined completely by the context of the utterance. Despite numerous suggestions such as that of Ferris (1993: 146) who suggests that 'one of the stricter linear rules of order […] is that superlatives and comparatives precede other adjectives', as well as all those semantic-based orders which place size adjectives much earlier in a modification string than adjectives of nationality, this order is reversible depending exclusively on the context of usage. If the speaker is remarking that, of all the Italian students, there is a shortest one, then the given order will stand. If, however, the speaker is remarking that the shortest student in the class happens to be Italian, then the order will be reversed, giving the utterance 'my class has an Italian shortest student'.

Huddleston and Pullum (2002: 562) note another potential functional shift for certain adjectives within a modification string, in what they refer to as 'intensificatory tautology'. This is when 'a sequence of two adjectives with identical or nearly identical meanings' is used in a way which produces a suggestion of intensification of the latter adjective. Their examples of this feature include *a tiny little bird* and *a great big hole*. They liken the former example to intensificatory repetition, a feature of English similar to that of reduplication in other languages (see Chapter 2). This is where an adjective is repeated to emphasise an excess of a quality, such as *the tiny, tiny bird*.

The example of *a great big hole* is of more interest and relevance to adjective ordering. In this example, *great* is used not in its normal sense of conveying power or prestige, but in an intensifying, adverbial capacity with a meaning similar to *a very big hole* or *an extremely big hole*. This function is lost if the order is reversed, with *a big great hole* not retaining this combined meaning. If the head is replaced by the noun *warrior*, this contrast in the meaning of great is more noticeable. *The great big warrior* refers to an intensification of size while in *the big great warrior* it retains its individual meaning of suggesting a warrior of great fortitude, skill and bravery, although the use of a comma between these two modifiers is preferable. The choice of order here depends very much on the nature of the head, and the kind of modification being applied.

Quirk et al (1985: 1342) conclude with the suggestion that 'writers and speakers will naturally arrange premodification semantically, *ie* according to their communicative intentions. However, there is no total freedom'. The aim of this project is to investigate what freedoms do and do not exist for speakers in the organisation of this syntactic feature.

4.4 **Summary**

The order of adjectives in English PNPs is an extremely complex and interesting syntactic phenomenon due to the varied morphological and semantic properties of members of the class. While it can sometimes be difficult to assess whether a word is an adjective rather than a noun or a verb, this variation in semantic and functional characteristics makes any investigation of the ordering in modification strings particularly interesting. In Chapter 5, I present data from original fieldwork designed to investigate the various semantic-based order theories commonly proposed to explain the varied nature of adjective ordering, as well as the more function and context-based observations of linguists such as Bache (1978) and Warren (1984).

5. English Data

5.0 Introduction

In this chapter, I present and analyse data from original fieldwork based on questionnaires investigating the structure of English PNPs. The level of analysis is more extensive than in subsequent chapters; this is because I use my English data to evaluate and investigate the order theories discussed in Chapter 4. Much of this discussion is relevant and applicable not only to English, but also to my other focus languages in later chapters. In 5.1, I discuss the aims of the research and justify the use of questionnaire-based fieldwork as the primary methodology for my study of English PNPs. In 5.2, I outline the structure of the questionnaire, before presenting and analysing my quantitative data in 5.3. In 5.4, I augment this analysis with a discussion of the most common remarks made in the qualitative section of the questionnaire. In 5.5, I offer some summary remarks and draw some preliminary conclusions.

5.1 The Questionnaire

A questionnaire comprising 40 different questions (*Appendix A3*) was devised to test out as many of the order theories outlined in Chapter 4 as possible, without being so long that the data collection would be too great an imposition on the participants. All participants were students at Edge Hill University and were given the questionnaire to take home and complete in their own time. It was made clear that the answers given should be instinctive and naturalistic and that there were no right or wrong answers. Participants were asked not to consider too deeply why they felt adjectives should be placed in a particular order until the final section of the questionnaire. The questionnaire was divided into three parts: the first focusses on different grammatical and functional order theories; the second is based on semantic order theories and the third is a qualitative survey of the speaker's intuitions about how they choose to deal with multiple property concepts in English. The questions were structured in the format of a noun phrase consisting of a determiner, a dotted line and a head. A number of adjectives were then placed in brackets in alphabetical order beneath the dotted line and participants were asked what order they would sequence them in:

The ……. face

(dark, scary, thin)

Participants were asked to rate how difficult they found it to suggest the most natural-sounding order of the adjectives in each example, with a sliding scale involved: (1) easy; (2) neither easy nor difficult; (3) difficult. I wanted not only to be able to determine whether different order theories

were applicable, but which were more salient than others. For example, I would expect phrases which reflect common semantic order theories (Dixon 1982, among others) to yield a much lower average difficulty than phrases included with a view to investigating the salience of Bache's (1978) principle of length, which Bache himself suggested was subservient to other factors (1978: 78). An 'average difficulty index' (ADI) is provided for each question which represents the average difficulty rating returned by participants. By adopting this empirical scale of difficulty, I predict what kinds of adjective combinations have a more easily definable normative order. In my analysis, sequences with an ADI between 1.85 and 2.15 were not considered significant results. Phrases with ADIs of less than 1.85 were considered to have strongly normative preferred orders, while those with an ADI of more than 2.15 were considered to be more variable and to have a less easily distinguishable preferred order.

For this study, 120 questionnaires were distributed with the aim being to retrieve 50 completed scripts; this proved successful as 57 completed scripts were returned. Of the returned scripts, 21 had not provided the difficulty index and some had missed out occasional questions. A decision was made to leave seven of the returned scripts out of the results so as to achieve the desired 50 responses; the decision of which seven to leave out was based on the number of questions missed. All seven which were not considered were by participants who had not given difficulty indices and had missed out questions. In the sample which was counted in the study, only three questions were unanswered, although a number of participants did not supply the difficulty index for all questions. However, as these figures were analysed as percentages and mean averages respectively, this does not compromise the reliability of the data.

Each question in the questionnaire was developed to test out a particular order theory discussed in Chapter 4. Every adjective selected for inclusion is the result of considerable drafting and revising with the aim of presenting as many different parameters through which to study variation in sequencing. The rationale behind the selection of each question is outlined in 5.2, with results being presented and interpretations made.

5.2 **Quantitative Results**

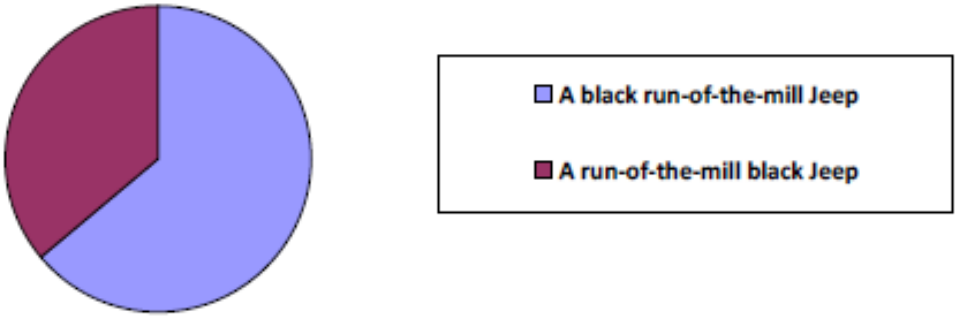
The results of the questionnaire are considered question by question, with a broader analysis of the relative implications of results presented in 4.5. For each question, the rationale for the choice of question is first discussed, with reference to particular order theories which are relevant to the selection of adjectives to be sequenced. The percentage response of each possible ordering is then given, followed by a discussion of how this relates to the order theory being tested. For each

question, a difficulty index (DI) is calculated based on the average result of the participants' evaluation of how difficult it was to place a particular collection of adjectives in a preferred order. This DI will fall between 1.0 and 3.0, with higher numbers indicating a higher level of difficulty experienced by the participant. This will allow me to make assumptions on the relative salience of respective order theories in English.

SECTION A:

1.

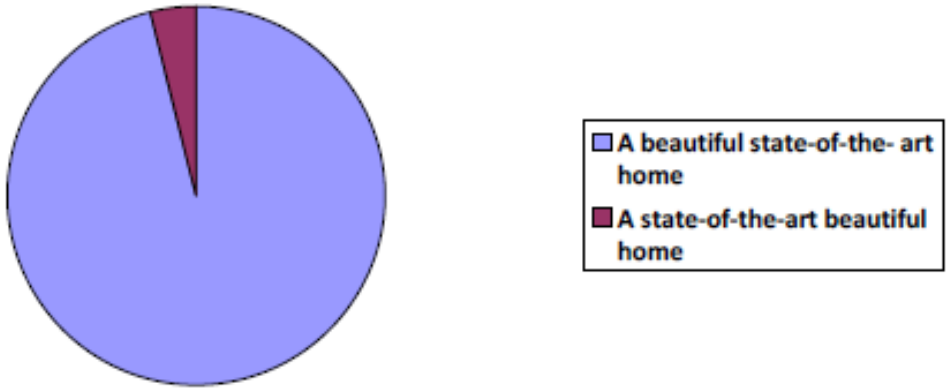
Orders	Incidence
A black run-of-the-mill Jeep	32
A run-of-the-mill black Jeep	18



Difficulty	Incidence. Difficulty index: 1.42
1	23
2	11
3	2
No rating	14

2.

Orders	Incidence
A beautiful state-of-the- art home	48
A state-of-the-art beautiful home	2



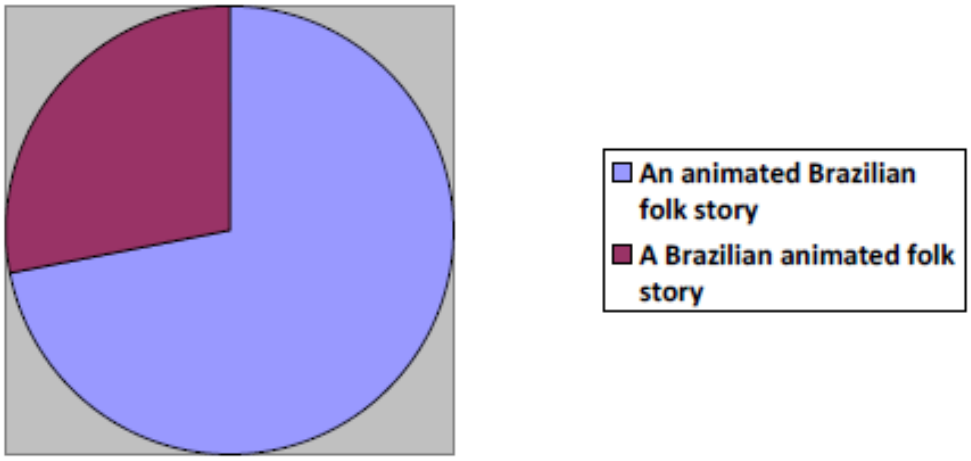
Difficulty	Incidence. Difficulty index: 1.19
1	30
2	5
3	1
No rating	14

The first two questions were selected to test Bache's (1978: 76) principle of length, which suggests that shorter words tend to precede longer words when both words occupy the Mod-II slot. Exaggerated examples of this phenomenon were required so phrasal adjectives were chosen as the longer form and central, common adjectives were chosen as the shorter form. Both examples support Bache's principle, but the former less so than the latter. A possible explanation for this is that the less-expected *run-of-the-mill black Jeep*, in which the longer, phrasal adjective precedes the shorter adjective *black*, has a semi-adverbial function. This is to say that the Jeep can be described as run-of-the-mill because it is black, as most Jeeps are. This example also returned a slightly higher (although still low) average difficulty index of 1.42 compared to *the beautiful state-of-the-art home* (1.19), which can be observed to have less of an adverbial relationship between the two modifiers. A

beautiful home is not state-of-the-art in the same way that a black Jeep might be considered run-of-the-mill due to its common colour. Additionally, *beautiful* is a more subjective judgement than the more objective *state-of-the-art* which, following Whorf (1937 [1956]), suggests it is more likely to appear in head-initial position. In *a black run-of-the-mill Jeep*, the phrasal adjective is more subjective than the colour, hence *black* is drawn to being placed closer to the head. While Bache's (1978) principle of length clearly has salience here, the level of subjectivity also affects the ordering.

3.

Orders	Incidence
An animated Brazilian folk story	36
A Brazilian animated folk story	14



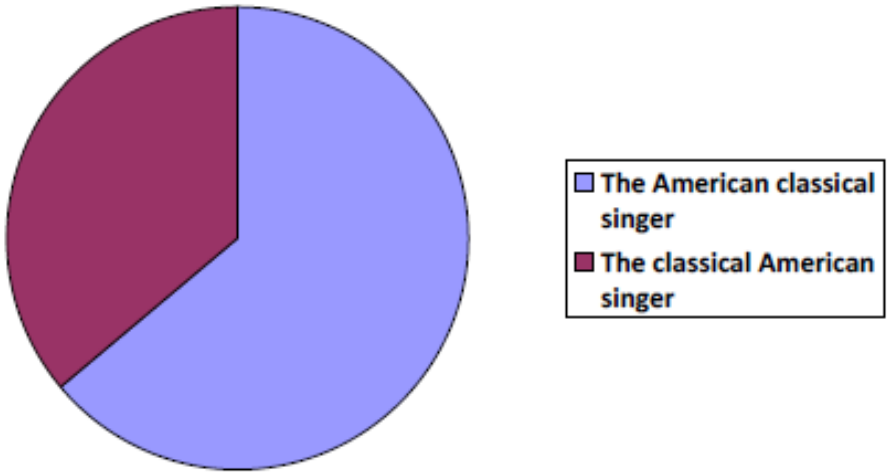
Difficulty	Incidence. Difficulty index: 1.42
1	23
2	11
3	2
No rating	14

Questions 3 and 4 were included to investigate Bache's (1978: 55) Principle of Classification in which he suggests that Mod-III adjectives appear in sequences which are 'hypotactically related and the order is functional'. The suggestion in question 3 is that participants would classify the head *story*

first into the subclass of *folk stories*, then into the further subclass of *Brazilian folk stories*, before specifying the mode of narration, with *animated Brazilian folk story* being the full phrase. This was the case for 72% of participants, with the remainder placing *Brazilian* first. While this makes sense, it also carries a possible suggestion once again of a semi-adverbial function; this could be a folk story which was animated by a Brazilian, which is also a viable interpretation of the less preferred order.

4.

Orders	Incidence
The American classical singer	32
The classical American singer	18



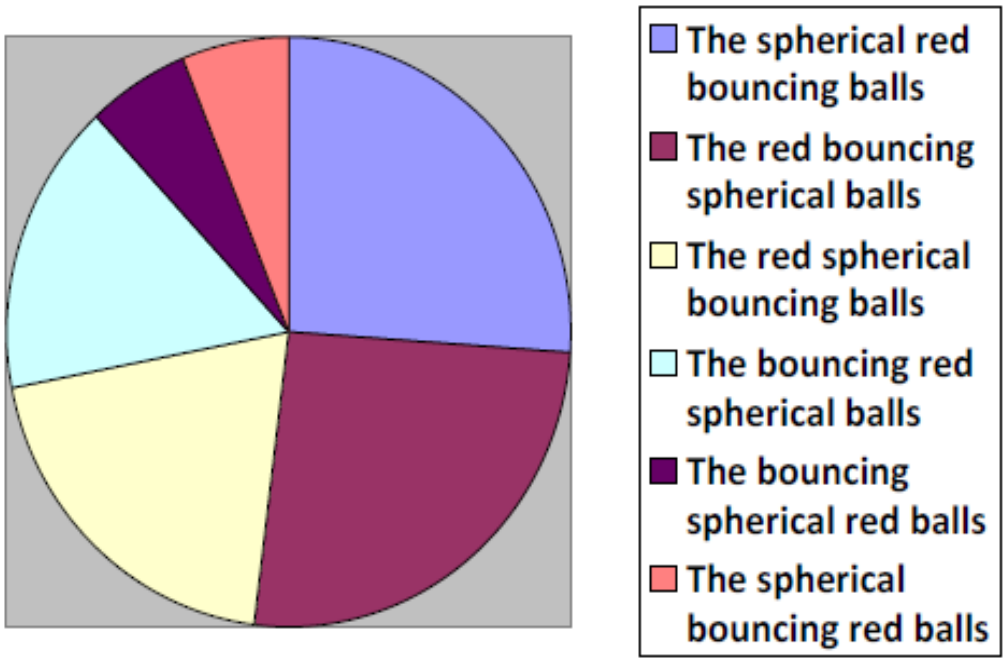
Difficulty	Incidence. Difficulty index: 1.42
1	22
2	13
3	1
No rating	14

This particular question was deliberately ambiguous, with both potential orders being viable, but carrying distinctive meanings. *The American classical singer*, returned by 64% of participants suggests this is someone who sings classically and happens to be American, while *the classical American singer* was less favoured at 36% and suggests that this is a singer who is exhibits the classic traits of an American performer. This was designed not to 'test' Bache's Principle of Classification

(*Ibid*), rather to investigate the order in which speakers are most likely to classify a head. It seems that there is more to consider here than simply classifying more narrowly as the adjectives move away from the head. In fact, as adjectives move away from the head, they tend to modify it less directly, rather modifying more closely the following modifier. This is certainly the case in the latter example; perhaps less so in the former, in which *American* still directly modifies the head.

5.

Orders	Incidence
The spherical red bouncing balls	13
The red bouncing spherical balls	13
The red spherical bouncing balls	10
The bouncing red spherical balls	8
The bouncing spherical red balls	3
The spherical bouncing red balls	3



Difficulty	Incidence. Difficulty Index: 2.08
1	8
2	17
3	11
No rating	14

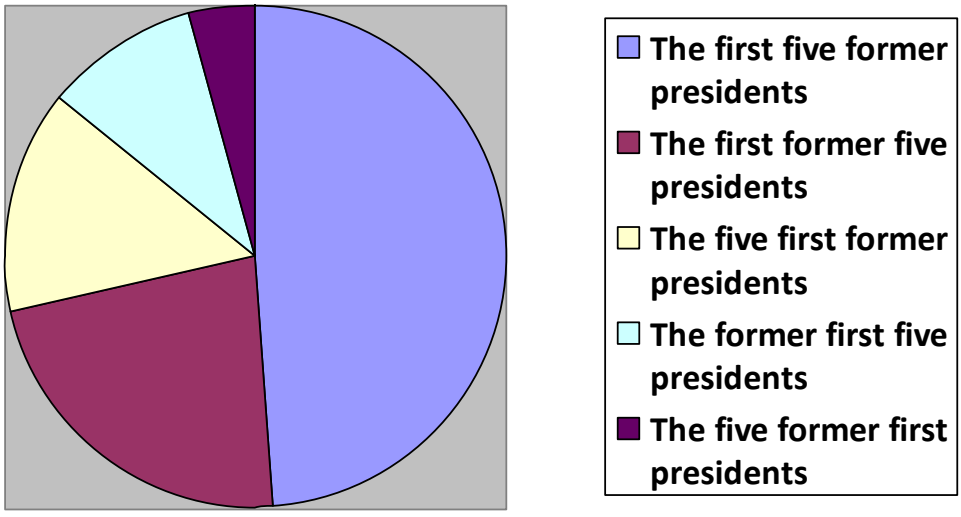
This question was designed to investigate how participants would deal with adjectives with a variety of properties. Three adjectives were chosen; a dynamic, mobile participial adjective *bouncing*, and two more central adjectives; a colour adjective (*red*) and a more technical, less commonly-occurring denominal adjective of shape or dimension (*spherical*). All 6 potential orders were returned with no strongly dominant order. This question returned a medium difficulty index of 2.08 and indicates that, despite these adjectives all being different in terms of their morphology and semantics, there is no clear way of recognising a 'normative' sequence. What is clear is that this order is reversible and non-distinctive (Bache 1978: 18), which is to say that any order can occur without there being a change in the meaning of the phrase.

Despite no order being particularly prevalent, these data do display some particular trends in terms of the respective placement of adjectives. The three most favoured orders all place *red* further from the head than *bouncing,* a feature present in 72% of participants' orders. The two most common orders (collectively 52% of responses) feature the collocation *red bouncing*, with *spherical* occurring variably before or after this sequence. *Red* is the adjective least commonly collocated with the head, with only 12% of participants placing it closest to the head noun, while *bouncing* occurs most commonly in pre-head position, in 46% of responses. Although these data support Bache's suggestion (1978: 17, see also Crystal 2009: 223) that in some PNPs 'there is no preference of order', they also provide evidence that there are sequences (based on morphological and semantic properties) which are more likely to be chosen by a speaker than others.

6.

Orders	Incidence
The first five former presidents	**24**
The first former five presidents	11
The five first former presidents	7
The former first five presidents	5
The five former first presidents	2
No response	1 (E002)

This question was included as an example of the potentially problematic nature of strings of Mod-I adjectives and in particular that of the word *former.* As Dixon suggests (1982: 24), Mod-I adjectives, rather than directly modifying the head, specify the context of everything which follows them within the noun phrase. This naturally affects the order in which Mod-I adjectives are sequenced, as some take more readily to being sub-modified than others do. This is something which is dependent almost exclusively on the semantic properties of each adjective. The most common order in this study is *the first five former presidents*. Nearly three quarters of participants had the ordinal number first, and *former* only preceded *first* in 14% of responses.



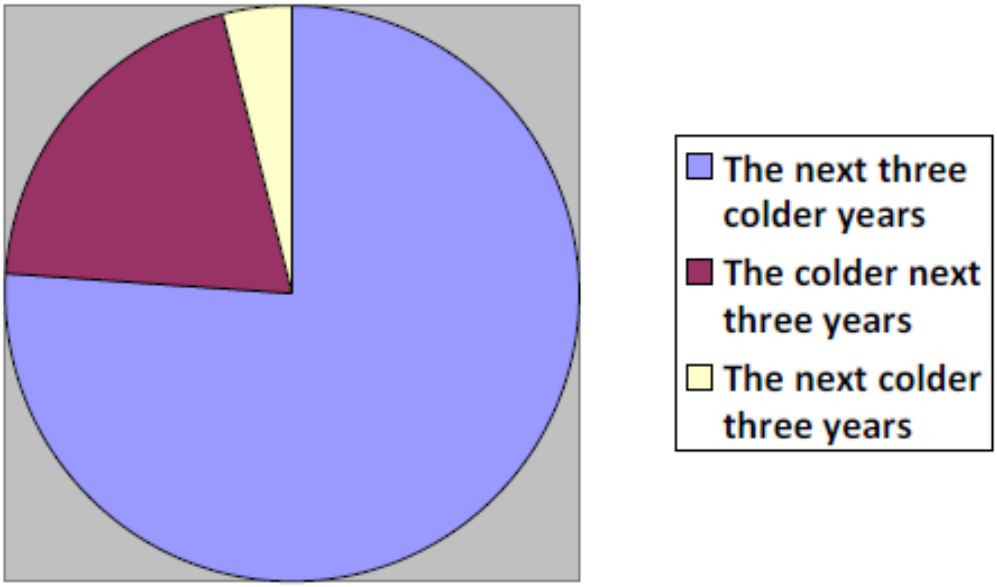
Difficulty	Incidence. Difficulty Index: 2.17
1	8
2	14
3	14
No rating	14

The ordinal number *first* is a very definitive term, which places a person or event right at the top of a chain of similar entities in terms of time of occurrence or level of attainment. It generally conveys a fixed and permanent state; *the first president* or *the first man on the Moon,* for example, are not titles which can realistically change. The collocation of this term with the word *former* is problematic in that the latter term indicates that the head is changeable over time. *The former president* carries with it the suggestion that a person carries the title of President for a limited period of time. The difficulty of combining the terms *former* and *first* in the same noun phrase is that they inhabit similar and sometimes contradictory semantic areas and the order in which they appear is thus restricted. In this case, *the former first president* is problematic and verging on being ungrammatical. It holds therefore that *the first former president* is the only logically coherent ordering, even though the term *former* might seem redundant outside of a very specific context.

Despite an expectation that only certain orders might be possible here, five different orders were suggested by participants as being the most natural-sounding. The most reasonable interpretation for this statistic is simply that speakers of English find it difficult to deal with strings of semantically similar Mod-I adjectives. When faced with placing three adjectives, all of which specify the head in a particular way, into a logical order, this takes considerable thought and attention. As I asked participants to give spontaneous answers as to what seemed the most natural-sounding order, it is likely here that some responses were given spontaneously and do not necessarily reflect the most common order in natural usage. This is not a sequence, such as 'big brown dog', which lends itself more towards a single, logical ordering; it is rather an exercise in logic. The variation in orders here suggests that adjective ordering is a very multi-faceted syntactic phenomenon with tendencies and conventions which vary depending on a number of different factors. The fact that this phrase was supplied in isolation and without co-text potentially leads participants to create a context themselves, which can influence the order in which adjectives are placed. As discussed in Chapter 2, the possible presence of multiple contexts leads to more than one distinctive order being possible.

7.

Orders	Incidence
The next three colder years	38
The colder next three years	10
The next colder three years	2



Difficulty	Incidence. Difficulty Index: 1.94
1	12
2	14
3	10
No rating	14

This phrase was included as an extension to the previous question on Mod-I strings, but with the addition of a comparative. Interestingly, the ordinal numeral phrase *next three* was returned by 96% of participants, with the comparative either preceding or following it, with the latter preferred by 76%. This contradicts Ferris' (1993) suggestion that graded forms usually precede non-graded adjectives, and suggests rather that compared adjectives are more 'mobile' within the adjective string. The position of the comparative here depends on whether it is considered to have a restrictive, specifying function or if it is used more descriptively. In this case, the more descriptive,

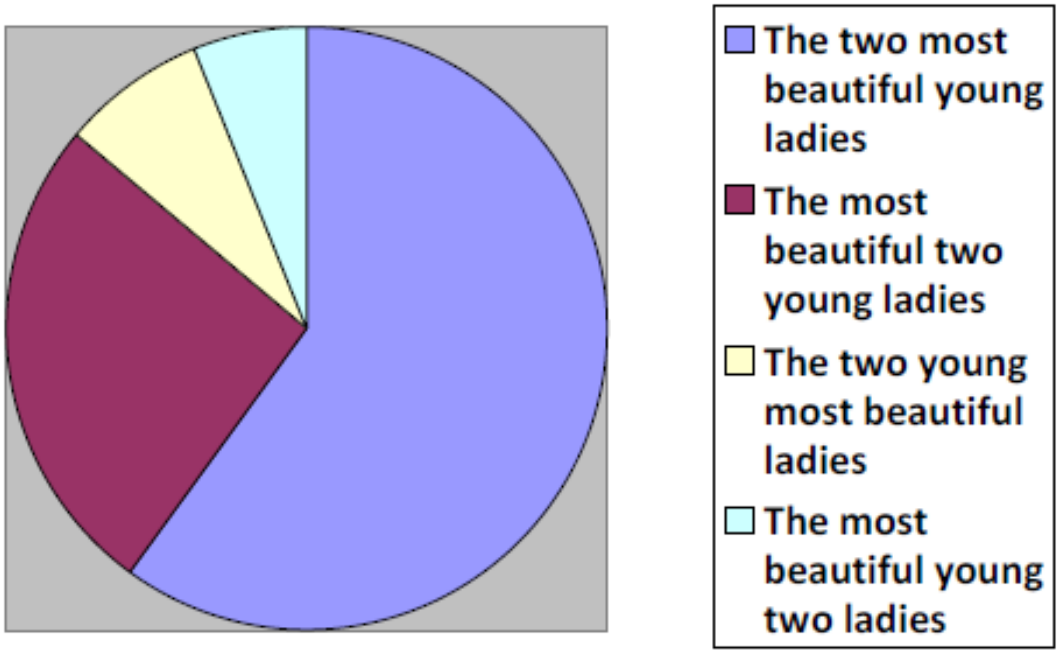
non-restrictive function seems more appropriate to participants, with ‘next’ and ‘three’ being more overtly restrictive. This sequence is best considered in light of Bache’s (1978) principle of specification, with the referent of the head *years* being specified in linear fashion first by *three*, into groups of three years, and then by *next* which identifies which three years are being specified. *Colder* here functions as a Mod-II adjective and does not provide specifying information about the noun, rather modifying it in a non-restrictive, descriptive way.

Example 8 (below) builds on the previous phrase by replacing one of the Mod-I adjectives with a central Mod-II adjective of age in order to further investigate the behaviour of graded forms. The comparative in example 7 is seen to function as a Mod-II adjective but with particular mobility allowing it to appear ahead of a Mod-I string and the same properties are displayed by the superlative form in this example. The most popular order, returned by 60% of participants was *the two most beautiful young ladies*, with the superlative appearing between the cardinal numeral and the Mod-II adjective. A notable further 26% had the superlative placed ahead of the numeral, with a stronger specifying function. The head can be specified first by number and then by beauty or in the reverse order; that is to say, we can identify the pair of young ladies who possess more beauty than any other pair, or we can arrange all the young ladies in order of beauty and specify the first two.

As beauty is a more subjective, descriptive quality than the more objective quantity indicated by the adjective of age *young*, it is to be expected (as per Whorf 1937) that *most beautiful young* is the more natural-sounding order to the majority of speakers. This is reflected in the responses: 92% of participants placed the adjectives in this order, strongly supporting the notion that subjective, evaluative adjectives precede those denoting objective qualities.

8.

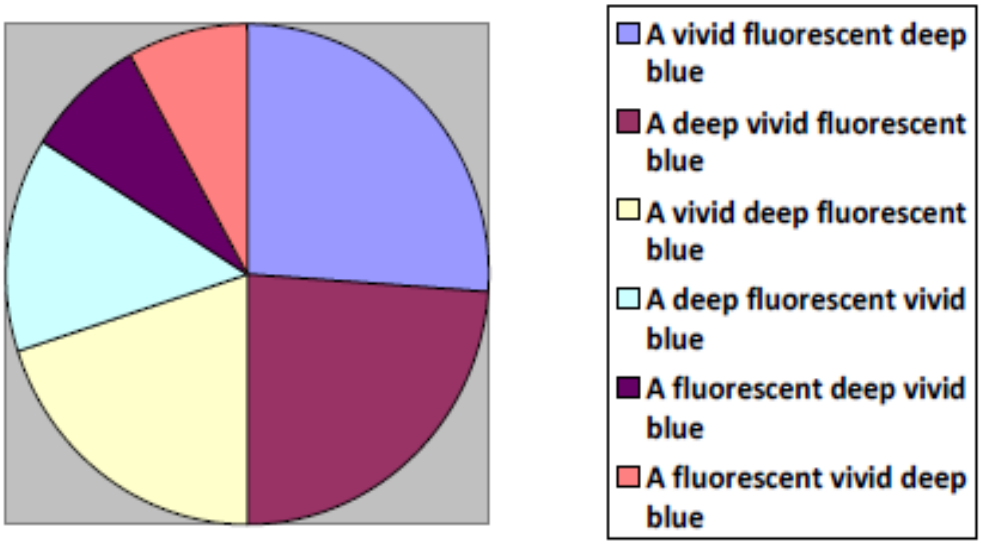
Orders	Incidence
The two most beautiful young ladies	30
The most beautiful two young ladies	13
The two young most beautiful ladies	4
The most beautiful young two ladies	3



Difficulty	Incidence. Difficulty Index: 1.44
1	22
2	12
3	2
No rating	14

9.

Orders	Incidence
A vivid fluorescent deep blue	13
A deep vivid fluorescent blue	12
A vivid deep florescent blue	10
A deep fluorescent vivid blue	7
A fluorescent deep vivid blue	4
A fluorescent vivid deep blue	4



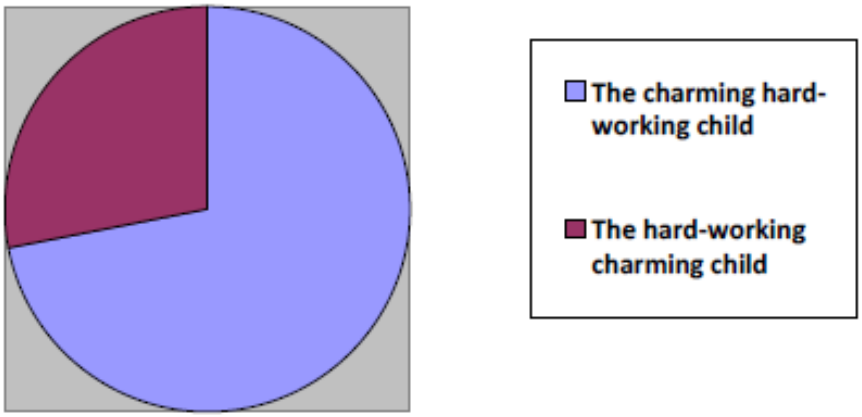
Difficulty	Incidence. Difficulty Index: 2.17
1	6
2	18
3	12
No rating	14

The next two examples were included to investigate Bache's (1978: 76) principle of length, in which he states that 'short Mod-II adjectives tend to precede long Mod-I adjectives, especially if the adjectives belong to the same morphological subclass (underived, deverbal or denominal adjectives)'. One example Bache gives of this phenomenon is 'a deep vivid blue', so I chose to expand this even further by adding *fluorescent* to this string. As all of these adjectives can be said to be underived forms, the normative order according to the principle of length would be *a deep vivid fluorescent blue.* This ordering was in fact only returned by 24% of participants, with *a vivid fluorescent deep blue* (26%) being equally commonly preferred.

While these data do not seem to support Bache's principle particularly strongly, there is evidence to suggest that the length of word does contribute to the ordering. *Fluorescent*, the longest word of the three, was most commonly placed in string-final position (44% of tokens) and also appears least frequently in string-initial position, in just 16% of tokens, while *vivid* (46%) and *deep* (38%) are much more commonly placed first in the sequence. *Deep,* according to Bache's principle of length, would be expected to appear most commonly in word-initial position, yet occurs almost equally in all three slots. This might be explained by the suggestion that *deep* could be said to be more commonly collocated with the head *blue*, as it is a common intensifier for colour terms. In the *British National Corpus*, the collocation *deep blue* appears 124 times, which is relatively high when compared to other common collocations such as *dark blue* (236), *light blue* (74), *navy blue* (106) and *sky blue* (18). *Vivid blue* interestingly occurs just 31 times, while *fluorescent blue* does not occur at all. A normalised analysis shows that statistically, *vivid* is more commonly collocated with *blue,* although both *vivid* and *deep* are strong collocates. When considering the likely collocation of *deep/ vivid* and *blue,* the fact that *fluorescent* appears most commonly in string-final position (although notably in string-initial position in 18% of tokens) goes a long way to supporting Bache's principle of length.

10.

Orders	Incidence
The charming hard-working child	36
The hard-working charming child	14

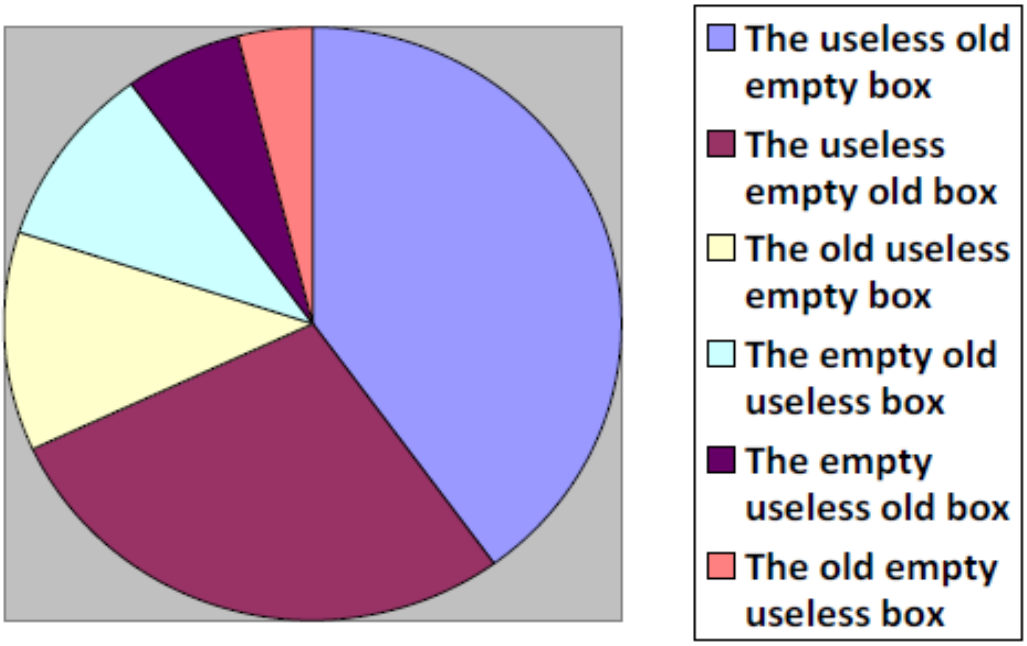


Difficulty	Incidence. Difficulty Index: 1.34
1	23
2	12
3	0
No rating	15

This example also provides evidence to support Bache's (1978) principle of length, with two derived forms of varying length forming a two-adjective string. Both *charming* and *hard-working* are participial adjectives, but both fall toward the adjective end of the continuum proposed in Chapter 4. While both are linked to the actions of working hard and charming someone, both denote more of a typical attribute of a person rather than the performance of either action. As *the charming hard-working child* is preferred to *the hard-working charming child* in 72% of responses, it is possible to conclude once again that Bache's principle of length is largely accurate. It is also, however, notable that the adjective *charming* feels more divorced from its verbal origin than *hard-working*. Quirk et al (1985: 1324) refer to such participial adjectives as indicating 'a permanent or characteristic feature' and note that intensification by *very* is one test for whether a participle is more adjectival than verbal. This test would indicate that both adjectives in this example are adjectival but it is easier to find central adjectival synonyms for *charming* in words such as *nice* and *pleasant,* while hard-working is more restricted to other derived synonyms such as *industrious* and *disciplined*. It may well be the case that this greater 'adjectival' characteristic of *charming* has led to it being placed more commonly ahead of *hard-working.* This is investigated in more detail in later examples of this phenomenon in examples 33-37.

11.

Orders	Incidence
The useless old empty box	20
The useless empty old box	14
The old useless empty box	6
The empty old useless box	5
The empty useless old box	3
The old empty useless box	2



Difficulty	Incidence. Difficulty Index: 1.5
1	21
2	12
3	3
No rating	14

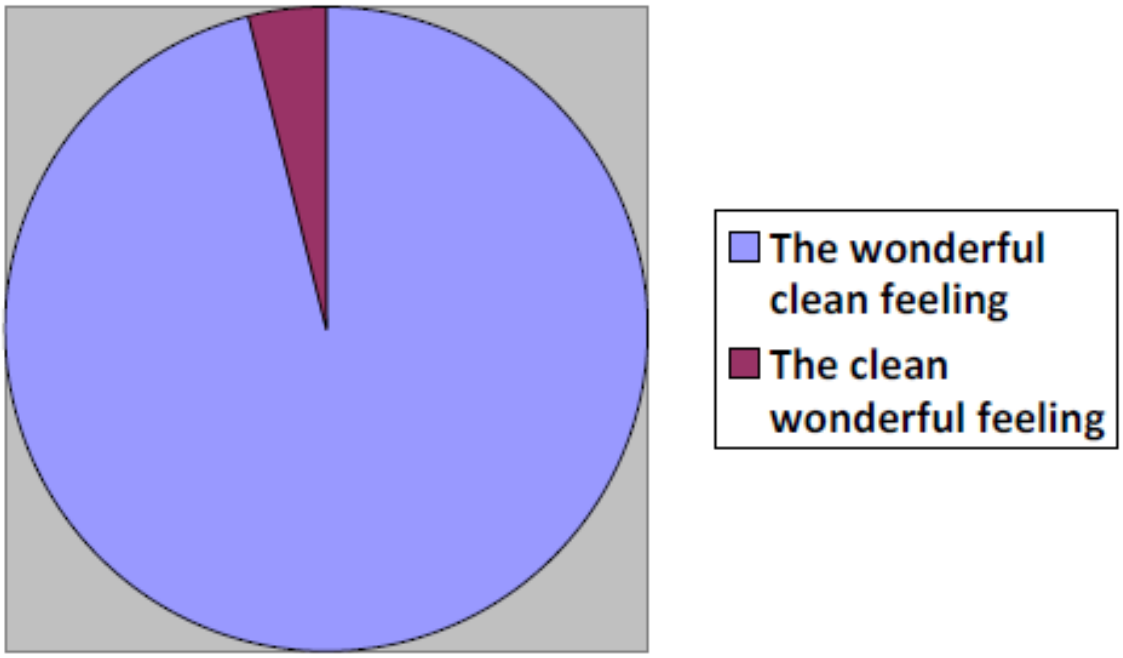
This is a particularly interesting example in that it illustrates a variety of features which affect adjective ordering. All three components of this string are Mod-II adjectives, with *useless* denoting a subjective evaluation and carrying some degree of emotive content, *empty* denoting an objective

physical characteristic and *old* suggesting the age of the head, but potentially carrying a more general diminutive connotation (see Teyssier 1968: 233). The words are also, once again, of varying length, which means that Bache's (1978) principles of length and emotional load are both relevant here. As would be expected from its nature of providing a subjective evaluation as well as its emotive strength, *useless* appears in string-initial position in 68% of responses. The position of this evaluative adjective at the beginning of this string increases the likelihood of a semi-adverbial ordering (Quirk et al 1985: 1339, Bache 1978: 74, Huddleston and Pullum 2002: 562), in which the reasoning for this negative judgement is implied by the word or words immediately following it.

The collocation *old empty* appears in 44% of responses while the reverse order of *empty old* appears in 38%, suggesting that there is no real dominant order here. Bache (1978: 76) suggests that *an old empty box* is a normatively-ordered sequence due to the principle of length but this is not really evident here due to the relative equality of preference among the two orders. One potential explanation for this is the diminutive connotation of *old* when used following other adjectives. By placing the adjective *old* after *empty,* this augments the element of negativity and derision towards the box which is already suggested by the earlier negative evaluative *useless*.

12.

Orders	Incidence
The wonderful clean feeling	**48**
The clean wonderful feeling	2



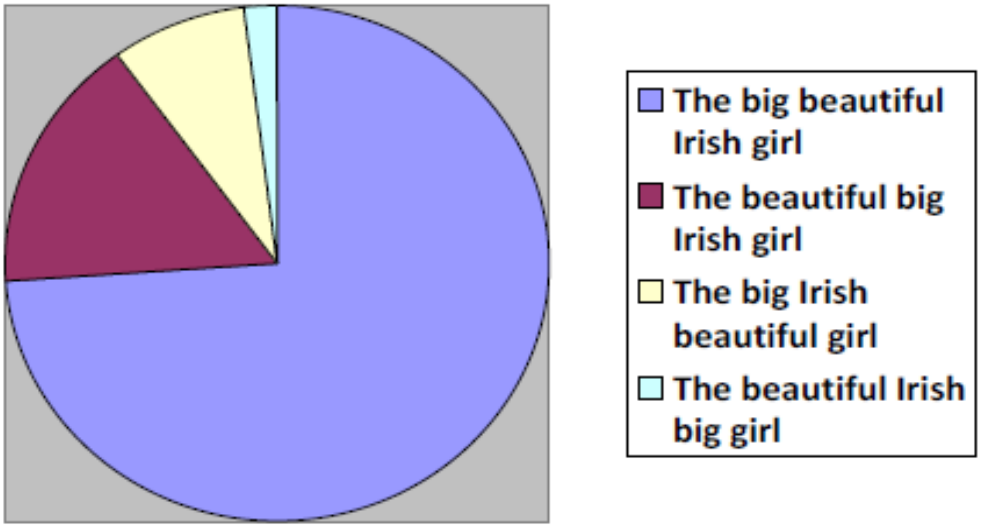
Difficulty	Incidence. Difficulty Index: 1.17
1	31
2	2
3	2
No rating	15

Question 12 was chosen to investigate Bache's (1978) principle of emotional load by providing a sequence with one clearly emotive adjective (*wonderful*) and one more neutrally descriptive adjective (*clean*). The results support the principle that more emotionally-loaded adjectives will precede less emotionally-loaded adjectives, with 96% of respondents placing wonderful in string-initial position. Quirk et al (1985: 1339) suggest that 'emotionally tinged adjectives often have an

adverbial, subordinated relation as indicated by their notional similarity with adverbs'; this is certainly the case here, with *wonderfully* interchangeable with *wonderful*. The fact that two participants selected the reverse order of *the clean wonderful feeling* suggests that this order is not ungrammatical, and supposes that the two adjectives function paratactically without an adverbial relation. This order would likely require commas, and would suppose that the feeling is wonderful but not necessarily because it is clean.

13.

Orders	Incidence
The big beautiful Irish girl	37
The beautiful big Irish girl	8
The big Irish beautiful girl	4
The beautiful Irish big girl	1



Difficulty	Incidence. Difficulty Index: 1.42
1	24
2	9
3	3
No rating	14

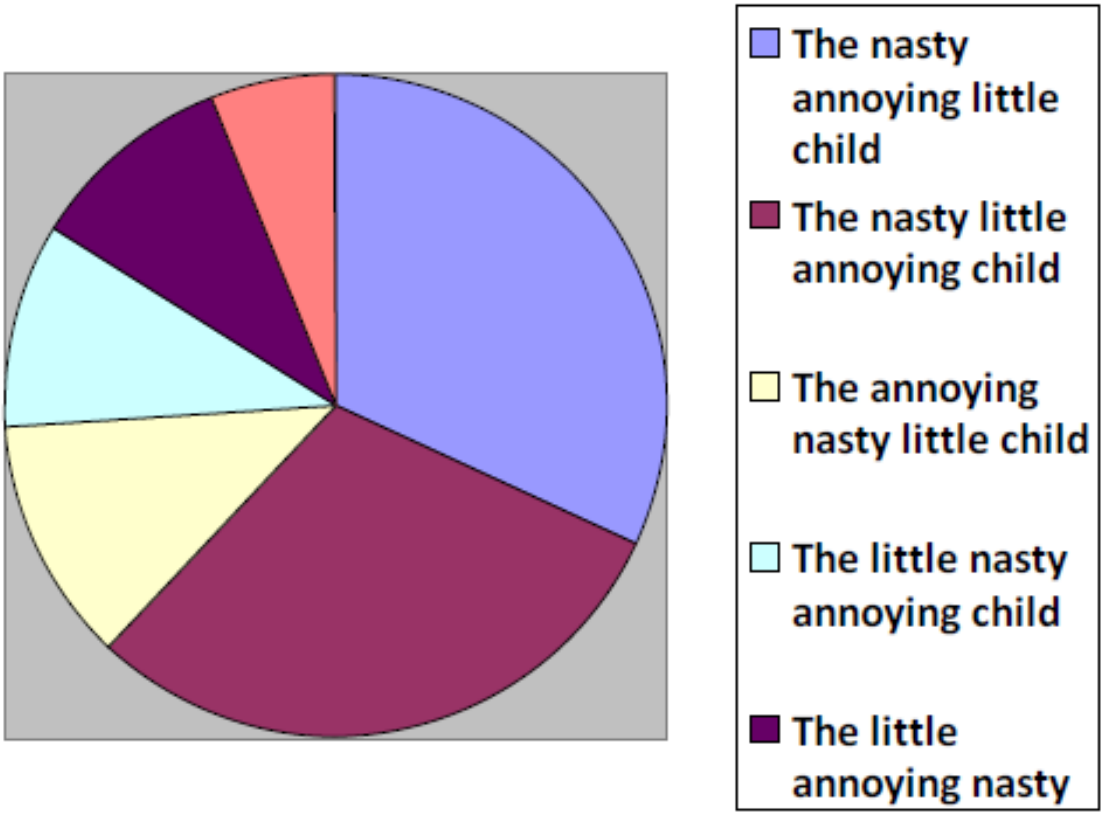
This question was chosen due to a combination of factors which suggested that one ordering would be extremely likely and predictable. A denominal Mod-III adjective denoting nationality (*Irish*) was selected, along with an objective judgement of physical size (*big*) and a subjective evaluative adjective (*beautiful*). These are three semantic areas which are commonly found in semantic order typologies. (Scott 2002; Dixon 1982; Goyvaerts 1968; Sproat and Shih 1988; Belke 2006). In addition to this, Bache's (1978) principle of emotional load would suggest that *beautiful* would be likely to precede *big,* due to its higher level of intensity; both Bache (1978: 73) and Quirk et al (1985: 1339) list *beautiful* as one of the most common emotionally-loaded adjectives..

For these reasons, it is unexpected that 74% of participants labelled *the big beautiful Irish girl* as the most natural-sounding order. There is a variety of potential explanations for this ordering. Firstly, it is expected that *Irish* is most commonly placed in string-final position, with 90% or responses fitting this pattern. The decision of the 10% of participants who placed Irish earlier in the string might be explained by a suggestion that neither *big beautiful* or *beautiful big* felt 100% natural. The fact that *big* precedes *beautiful* in nearly three quarters of responses could perhaps be down to a pragmatic, sociocultural issue. If speakers felt that the ordering of *the beautiful big Irish girl* suggested an adverbial relationship between the two Mod-II adjectives, this might be suggesting that the girl is beautiful simply because she is big. It is possible that participants felt a degree of reticence to propose such an ordering as it might suggest a degree of judgement or objectification.

Such an interpretation suggests that the context of the utterance and the combined social meaning of a string can be more important than the individual meanings of its components in isolation. Dixon (1982: 24) considers the importance of 'fixed idiomatic collocations' in this regard, and this idea links in with Feist's (2012: 37) concept of 'constructional grammatical meaning'. Dixon remarks that descriptive adjectives can often occur in a non-normative order but with a 'marked stress pattern', a notion also observed by Warren (1984: 285) who considers that adjectives within can have variable 'descriptive force' depending upon the desired focus or combined meaning of the speaker.

14.

Orders	Incidence
The nasty annoying little child	16
The nasty little annoying child	15
The annoying nasty little child	6
The little nasty annoying child	5
The little annoying nasty child	5
The annoying little nasty child	3



Difficulty	Incidence. Difficulty Index: 1.54
1	19
2	13
3	3
No rating	15

This example presents no individual dominant order, with two equally popular sequences returned by participants. *The nasty annoying little child* was selected in 32% of responses, with *the nasty little annoying child* being selected by 30%. Interestingly, all six potential orders were returned, with the other four sequences making up the remaining 38% between them. Each adjective here was chosen for a particular reason. *Nasty* is one of the adjectives named by Bache (1978) as being particularly associated with the principle of emotional load, and would therefore be expected to appear in string-initial position. *Annoying* was chosen due to the fact that it contains semantic information similar to that of *nasty*, with a negative and undesirable personality trait being suggested by both. *Annoying* is also interesting in that it is a participial adjective and hence offers an opportunity to investigate the range of comments made in this area. Huddleston (1988: 114) notes that there is often a 'fuzzy borderline' between the verbal and adjectival categories, but *annoying* fits perfectly what Laskova (2007: 125) refers to as 'adjectival participles', coming on the left hand edge of the diagram in *Figure 4.2*.

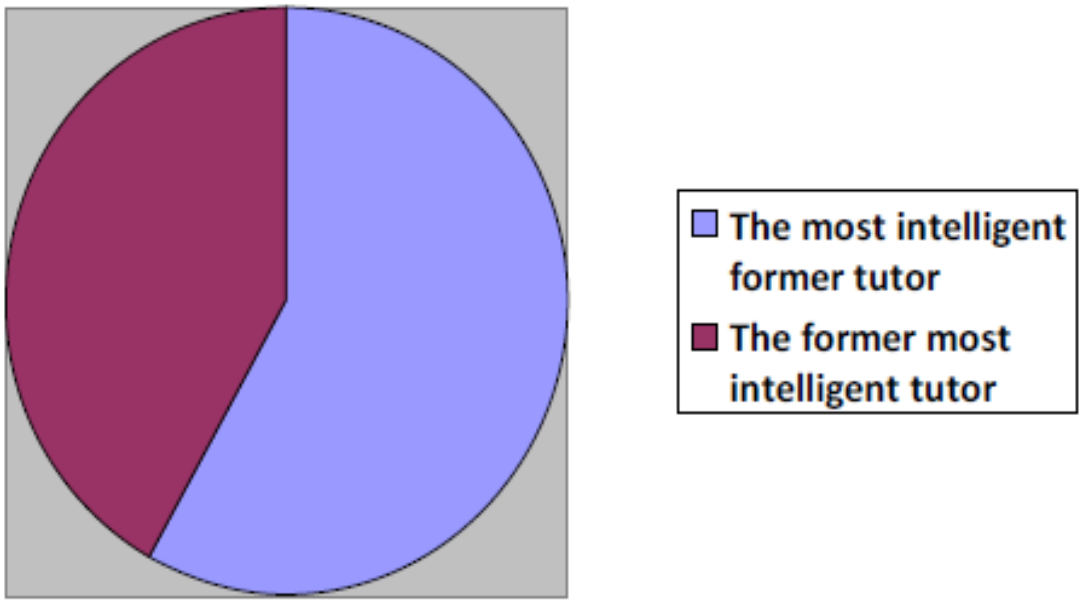
Little is once again chosen due to its potential to have transferable meaning between being a size adjective and a general diminutive (Teyssier 1968, Quirk et al 1985). In this example, *little* seems to retain its inherent meaning as a size adjective when it appears in string-initial position, which it does here in only 20% of responses. 74% of participants place *little* immediately after either *nasty* or *annoying,* with the three most popular sequences featuring *little* appearing in postposed position. It seems that, rather than being simply a general diminutive, *little* has an intensificatory function when used immediately following an evaluative adjective. In each of the top three sequences, *little* seems to imply a more intense judgement of the nastiness or annoyingness of the child, rather than suggesting that the child is small.

Interestingly, *big* seems to have the same kind of function, but with the syntactic and semantic criteria reversed. In phrases such as *the big bad wolf* or *the big beautiful brown eyes*, the dimensional quality of *big* is not necessarily overtly suggested, but with a more intensifying function

being suggested. Wolves and eyes are not generally considered as being particularly big; in fact, there is very little variation in the size of either head. Both *big* and *little* have this potential to provide intensification to collocated evaluative adjectives, but with *big* tending to be preposed but *little* postposed. One potential reason for this is the relative morphemic length of each adjective. Bache (1978) notes in his principle of length that simple monomorphemic adjectives often precede longer, more derived forms. When considering the difference between *a big nasty man* and *a nasty little man*, both phrases convey an intensification of the evaluative *nasty,* but with the former in a more intimidating and intensifying sense and the second in a more diminutive and derogatory way.

15.

Orders	Incidence
The most intelligent former tutor	29
The former most intelligent tutor	21



Difficulty	Incidence. Difficulty Index: 1.75
1	17
2	11
3	8
No rating	14

Questions 15 and 16 investigate further the relationship between Mod-I and Mod-III adjectives and in particular the roles of superlatives and the specifying adjective *former*. Bache (1978: 59) labels *former* as a 'deictic adjective' which would be expected to precede superlatives. However, the results suggest that this is far from obligatory, with 42% suggesting that *the former most intelligent tutor* is more natural-sounding. As Dixon (1982: 25) suggests, Mod-I adjectives modify everything which follow them in the phrase, leaving two distinctive reversible orders which carry a different meaning depending on the choice of order. *The most intelligent former tutor* suggests that of all the former tutors, the head is being specified as the one with the highest level of intelligence. In this sense, *former* has a more categorical function, classifying the tutors into subgroups of current and former employees. In the reverse order of *the former most intelligent tutor*, the suggestion is that this person used to be the most intelligent tutor, but was recently superseded by a new employee who now holds this title. This reinforces Feist's (2012: 37) notion of 'constructional grammatical meaning', with the ordering of adjectives dependent solely upon the combined meaning intended by the speaker, rather than the more abstract individual meanings of each adjective in isolation.

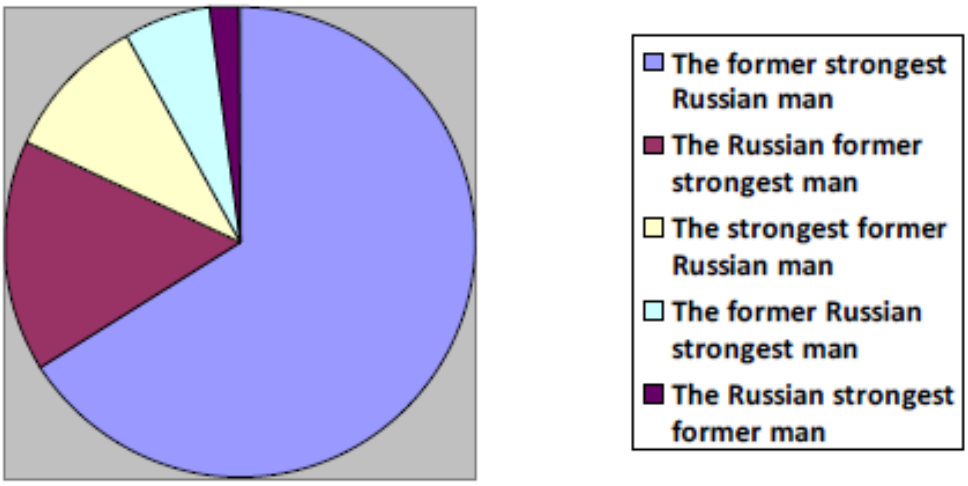
Question 16 develops our interpretation of this feature further, with *former* being strongly dis-preferred in string-final position, with only 1 participant returning this sequence. The reason for this is that the noun *man* indicates a more permanent quality than *tutor*. Recent technological advances aside, the notion of *a former man* is less familiar to speakers of English than *a Russian man* or *the strongest man*. What is particularly interesting here is the mobility within the string of the inherent Mod-III adjective of nationality, *Russian*. This adjective appears, as would be predicted by practically every order theory mentioned in this document (Quirk et al 1985, Bache 1978, Dixon 1982, Scott 1968 among others), in string-final position in 76% of responses. However, it appears in string-initial position in 18% of participants' preferred orders and also appears in the central position in a further 6%. *The Russian former strongest man* is the second most popular ordering, which is interesting considering this is a Mod-III adjective preceding two Mod-I adjectives. As Huddleston and Pullum (2002: 516), Bache (1978) and Leech et al (1982: 46) observe, the functional diversity of adjectives is

often considerable. This is reflected in the fact that the inherent Mod-I adjectives *former* and *strongest* in this particular example seem to operate as a single unit in the Mod-III slot, preceded by the inherent Mod-III adjective *Russian,* which functions more like a Mod-II adjective here, with increased descriptive force (Warren 1984). *Former Russian* seems a strange collocation, although in this case it could potentially denote that the man is either from a former Russian nation or has changed nationality.

Both of these examples feature average difficulty indices which are approaching 2.0, suggesting that participants did not necessarily find it easy to suggest a logical or most natural-sounding order for these sequences. The presence of multiple Mod-I and Mod-III adjectives in combination allows for a variety of distinctive interpretations of their constructed grammatical meaning, and therefore makes it more challenging to recognise a 'normative' order independently of context. This would suggest that a more context-sensitive explanation for these orderings, such as Dixon's (1982) observation that Mod-I adjectives modify everything which follows them in a sequence is more reliable than a semantic-based order theory for adjective strings of this kind.

16.

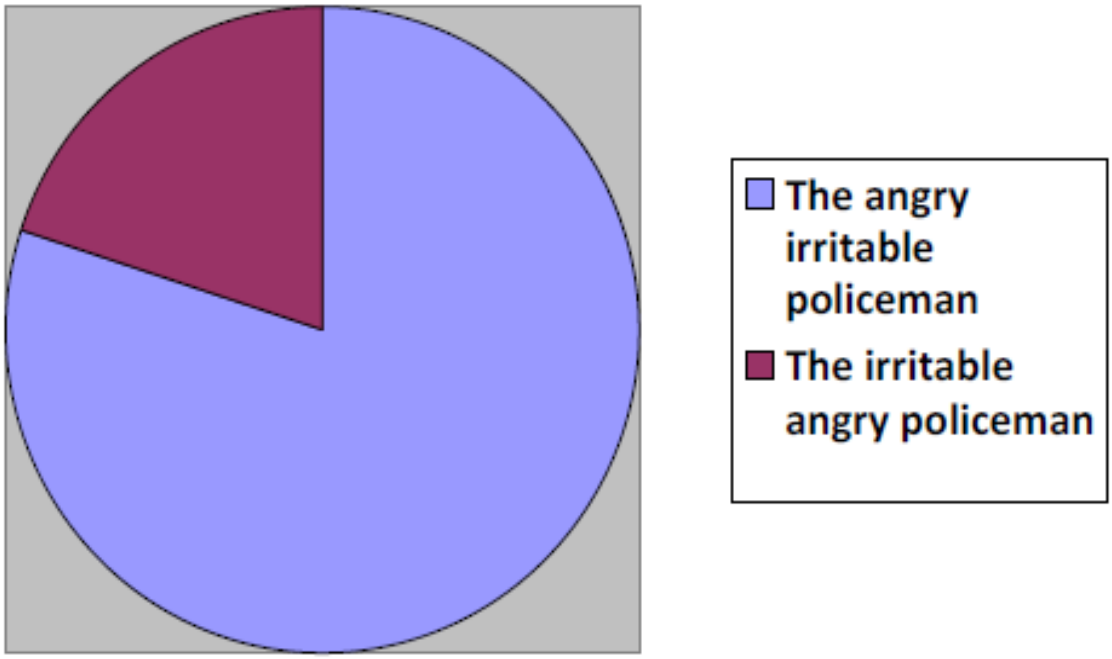
Orders	Incidence
The former strongest Russian man	33
The Russian former strongest man	8
The strongest former Russian man	5
The former Russian strongest man	3
The Russian strongest former man	1



Difficulty	Incidence. Difficulty Index: 1.91
1	13
2	11
3	10
No rating	16

17.

Orders	Incidence
The angry irritable policeman	40
The irritable angry policeman	10



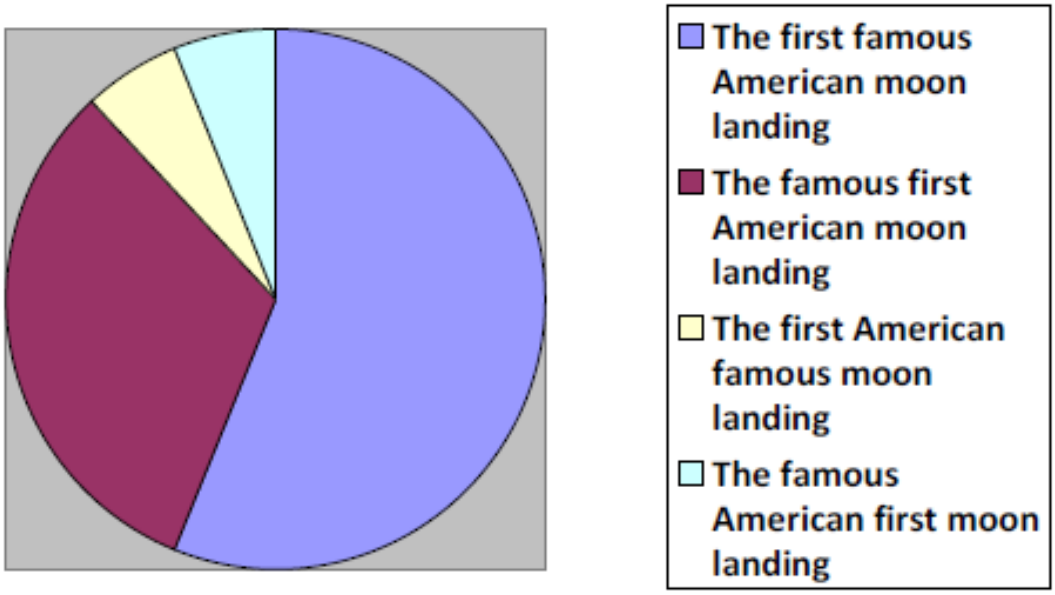
Difficulty	Incidence. Difficulty Index: 1.36
1	25
2	9
3	2
No rating	14

This adjective sequence was included to investigate the suggestion that adjectives denoting permanent characteristics such as personality traits tend to be placed closer to the head than adjectives which denote more temporary qualities. Quirk et al (1985: 434) and Givon (1970: 816) are among those to distinguish between adjectives based on the permanence of the state they denote.

In this example, *angry* and *irritable* were chosen as they denote semantically similar concepts, but as the more temporary state *angry* precedes the more permanent *irritable* in 80% of responses, it is fair to conclude that more temporary adjectives tend to precede permanent adjectives.

18.

Orders	Incidence
The first famous American mood landing	**28**
The famous first American moon landing	16
The first American famous moon landing	3
The famous American first moon landing	3



Difficulty	Incidence. Difficulty Index: 1.83
1	12
2	17
3	6
No rating	15

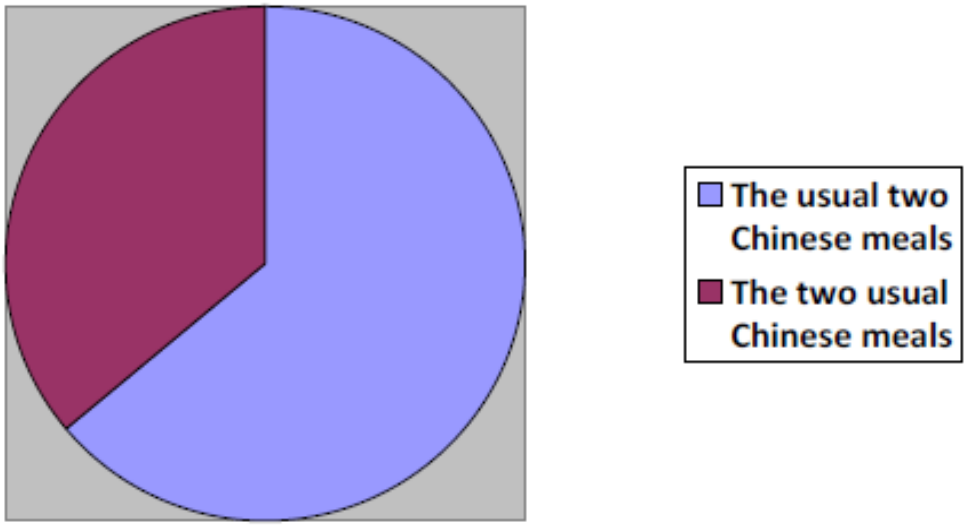
The above example has a medium difficulty index of 1.83 despite featuring a string of adjectives made up of an inherent Mod-I ordinal numeral *first,* a noun modifier *moon,* an adjective of nationality *American* and a general descriptive central Mod-II adjective *famous.* The normative, expected order based on Bache's (1978) work is *the first famous American moon landing*, and this sequence was chosen by 56% of participants as the order which sounds most natural. This noun phrase was deliberately chosen as this 'normative' order is actually contradictory to the sociocultural coherence of the combined meaning of the phrase. As Dixon (1982: 25) suggests that Mod-I adjectives always specify everything which follows them in the noun phrase, it is often the adjective which immediately follows a specifying adjective which is the subject of the most overt specification.

In *the first famous American moon landing*, there is a suggestion that, of all the American moon landings, this was the first one to be famous; this phrase carries with it an assumption that this is not the first American moon landing. There is also an implicit suggestion in the use of *American,* an inherent Mod-III classifying adjective (Warren 1984) that there had been moon landings by other nations prior to the one being referred to by the head of the noun phrase with this particular chosen sequence. Feist (2012: 68) notes that, for epithets (loosely equivalent to Bache's Mod-I adjectives) 'an apparently unitary descriptive meaning may be complex', and this is certainly the case in this example. It seems the prospect of having two more descriptive adjectives appearing ahead of a numeral in a string felt so alien to speakers that the most logical and coherent ordering was strongly dis-preferred.

Even the most basic knowledge of modern history would be sufficient to ascertain that the first moon landing was by America as it was very famous. The most logically coherent order for this noun phrase would be *the famous American first moon landing*, yet this order was only returned by 6% of participants. As *first* needs to precede the elements within the noun phrase being specified, it logically needs to be collocated with the collocation *moon landing*, which is present in every response given. However, speakers of English are so accustomed to ordinal numerals (as Mod-I adjectives) preceding descriptive adjectives and adjectives of nationality that 62% of participants placed *first* at the top of the phrase. The most logical position of Mod-I adjectives is not always confined to preceding Mod-II strings within a chain as is suggested by Bache (1978), Dixon (1982) and Quirk et al (1985), but is often placed immediately before the element within the string which is the most overt subject of specification. However, when faced with a particularly complex string of adjectives, speakers will often opt to follow more normative conventions of ordering which reflect the most common orders outlined by the above theorists among many others.

19.

Orders	Incidence
The usual two Chinese meals	32
The two usual Chinese meals	18

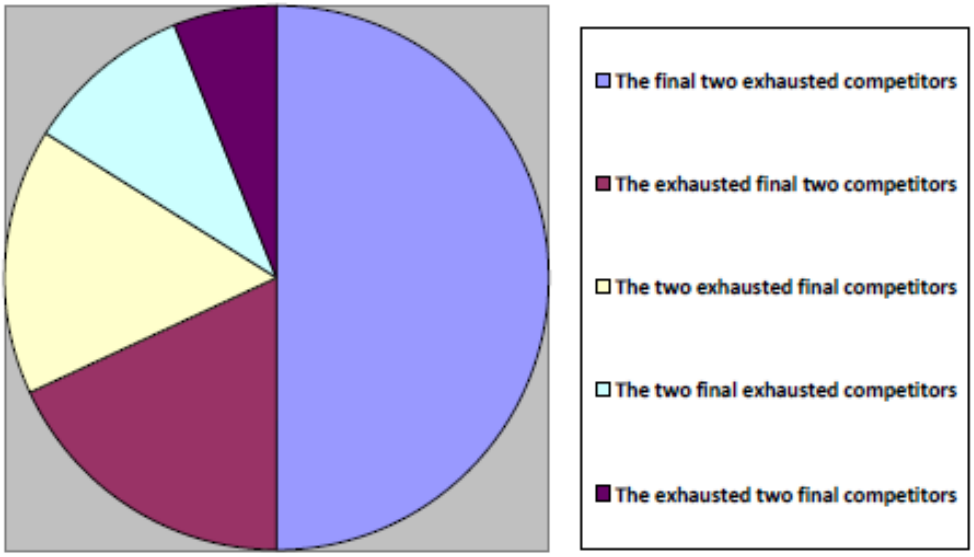


Difficulty	Incidence. Difficulty Index: 1.36
1	25
2	9
3	2
No rating	14

This example indicates once again that the organisation of Mod-I adjectives reflects Bache's (1978) principle of specification, rather than a sequence based on sub-classification of specifying adjectives. The Mod-III adjective *Chinese* appears in string final position in 100% of responses, as would be expected by the 'fixed idiomatic collocation' (Dixon 1982: 24) denoted by *Chinese meals*. The order of the two Mod-I adjectives *usual* and *two* is variable due to an unclear order of specification. Both orders are possible with only a slight change in meaning. This means that, while nearly 2 out of 3 participants preferred *the usual two Chinese meals* to *the two usual Chinese meals*, both of these orders are acceptable.

20.

Orders	Incidence
The final two exhausted competitors	25
The exhausted final two competitors	9
The two exhausted final competitors	8
The two final exhausted competitors	5
The exhausted two final competitors	3



Difficulty	Incidence. Difficulty Index: 1.56
1	18
2	16
3	2
No rating	14

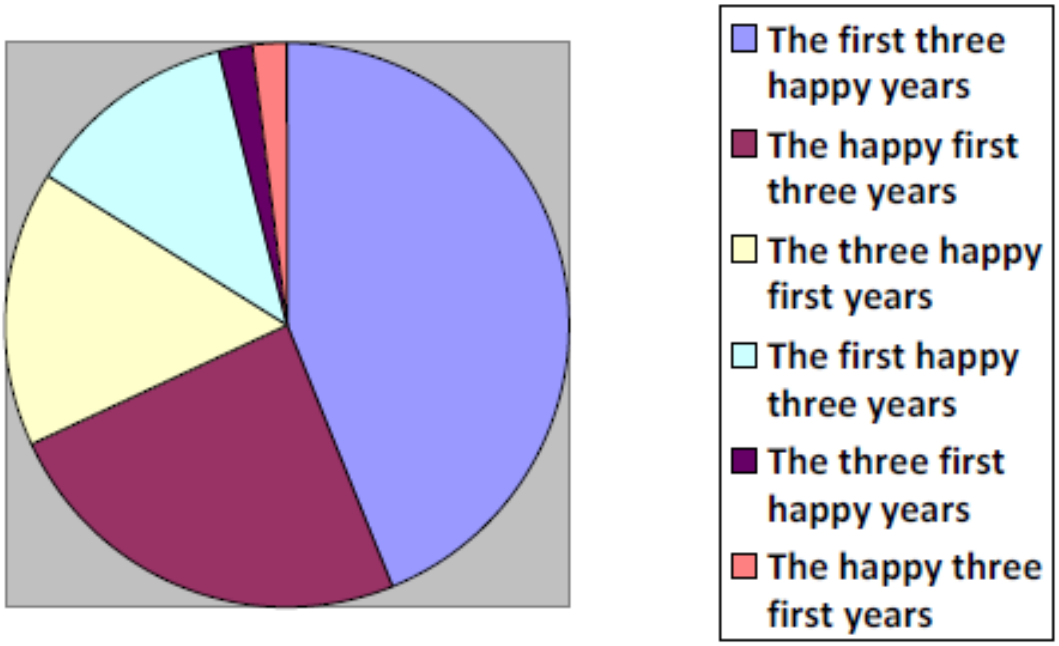
The phrases used in questions 20 and 21 both include two Mod-I numeral-based adjectives along with a more descriptive and inherent Mod-II adjective. In question 21, this is the central adjective *happy*, while in question 20 an adjectival participle *exhausted* is used. The results are similar across both questions, both of which yielded preferred orders which placed the descriptive adjective in string-final position, with the cardinal numeral following the ordinal. Both questions suggested that

a variety of different orders were possible, but for both questions the ordinal numeral preceded the cardinal numeral in 68% of responses.

The Mod-I adjective *final* is considered as an ordinal numeral as it makes reference to 'positions in a sequence' (Nelson 2001: 76). Most order typologies place ordinal numerals before cardinal numerals (Dixon 1982: 24-5, Scott 2002: 114 among others), as, in accordance with Bache's (1978) principle of specification, it is common to first specify a head into groups of a particular number, and then to organise these groups into a numerically ordered sequence. In this example, participants organised competitors into groups of two, before labelling this particular couplet as the final one in the string. The fact that *final* appears in pre-head position in as many as 22% of responses, despite being the head of the string in the most popular sequence, can perhaps be explained by its functional diversity, in that it can also be used as a noun modifier. The word *final* as a noun refers to 'the last game in a sports tournament or other competition' (OED Online), a concept which is strongly associated with two exhausted competitors. Similar diversity can also be observed to a lesser extent with the ordinal in question 21, with *first years* constituting a fixed idiomatic collocation (Dixon 1982: 24) associated with being a student. As all participants in this study were students, it is quite possible that the 18% of participants who collocated these elements did so with this interpretation in mind.

21.

Orders	Incidence
The first three happy years	22
The happy first three years	12
The three happy first years	8
The first happy three years	6
The happy three first years	1
The three first happy years	1



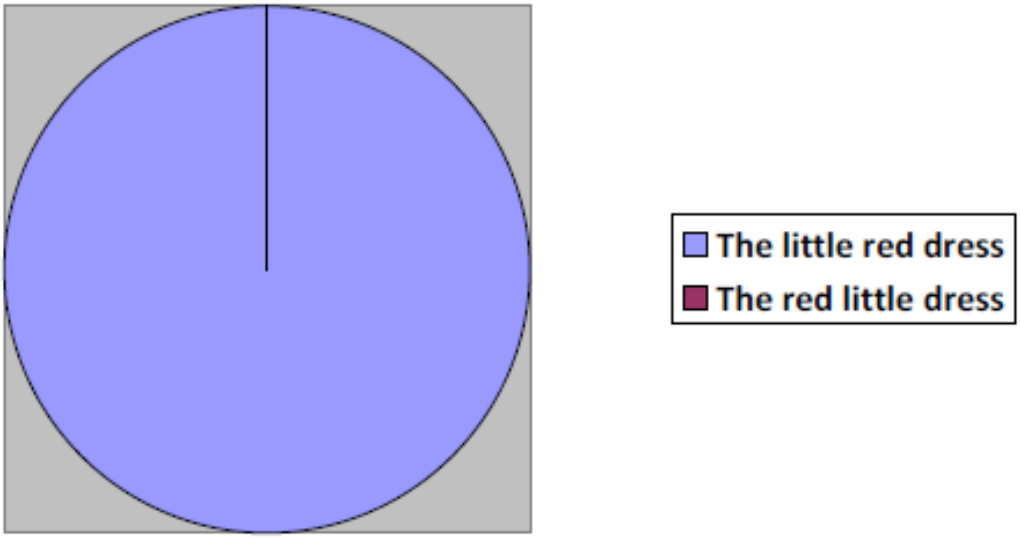
Difficulty	Incidence. Difficulty Index: 1.42
1	21
2	12
3	2
No rating	14

The most clear conclusion to make based on these two examples, and indeed the earlier examples in section A of the questionnaire is that adjective order is considerably more variable than much work on this feature suggests. There are exceptions to the trends and examples which go beyond semantic-based order theories and more complex function-based proposals by Feist (2012), Bache (1978) and Dixon (1982). The position of Mod-I adjectives in particular is far less constrained to string-initial position than is universally suggested.

SECTION B:

22.

Orders	Incidence
The little red dress	50
The red little dress	0



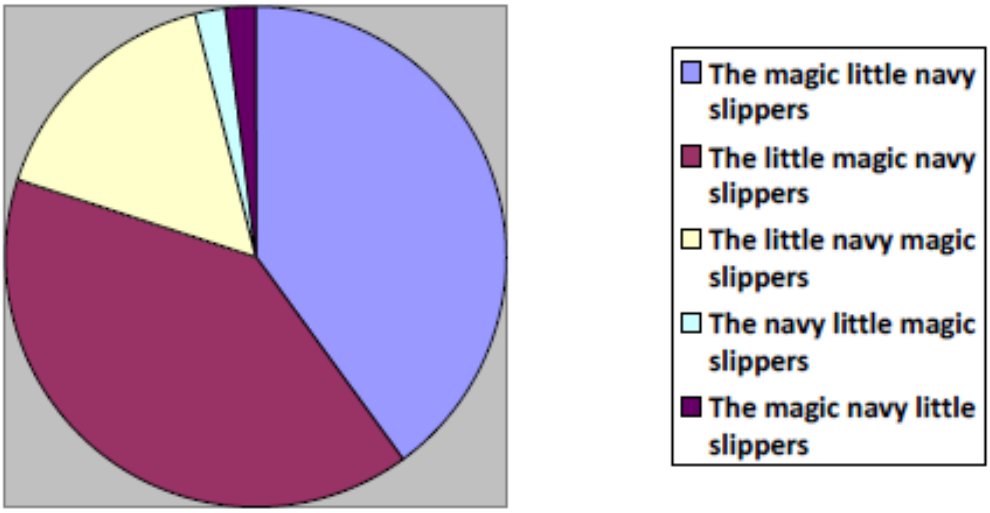
Difficulty	Incidence. Difficulty Index: 1.03
1	33
2	1
3	0
No rating	16

The next few questions are designed to investigate the various semantic order theories discussed in Chapter 4. This question produced the lowest difficulty index, with only one participant considering it anything other than easy. 100% of participants preferred *the little red dress* to *the red little dress*, which is an interesting result, and perhaps influenced by the fixed idiomatic collocation *little black dress*. Although practically all semantic order theories have colour terms coming closer to the head than adjectives of size or dimension, I had expected that the variable diminutive form of *little*

(Teyssier 1968) might have led to some participants selecting the latter order as sounding natural. The *red little* collocation appears 82,100 times in a Google search, and is by no means ungrammatical, but fails to appear in the BNC, alongside 142 tokens of the preferred *little red*. This is perhaps because diminutive *little* (Teyssier 1968) typically follows subjective evaluative adjectives rather than more objective colour terms.

23.

Orders	Incidence
The magic little navy slippers	20
The little magic navy slippers	20
The little navy magic slippers	8
The navy little magic slippers	1
The magic navy little slippers	1



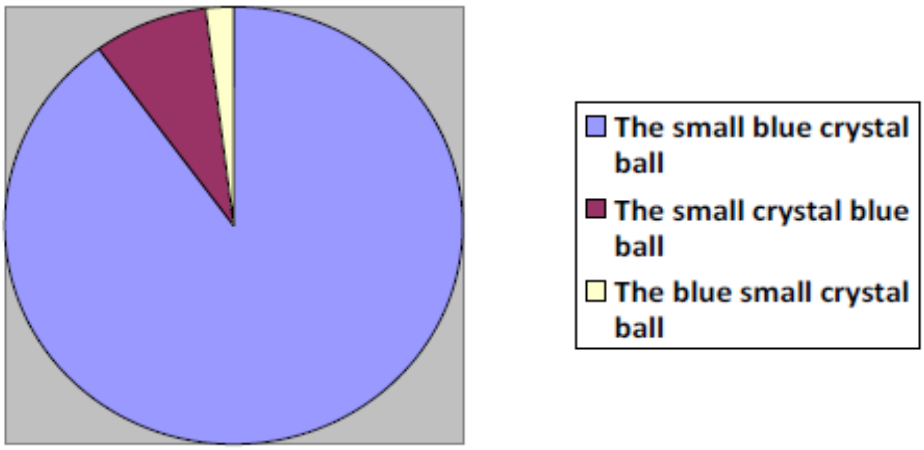
Difficulty	Incidence. Difficulty Index: 1.79
1	13
2	15
3	6
No rating	16

Questions 23 and 24 build on question 22, with a general descriptive adjective included alongside another pair of size and colour terms. I wanted to investigate whether this would affect the ordering and decided to include a less central colour term in order to investigate whether this had any effect. *Magic* and *crystal* fit into Dixon's (1982: 25) descriptive sub-class of 'physical propensity', and as such would be expected to fall between adjectives of size and colour terms. Interestingly, 80% of participants had *navy* in pre-head position, but the order of the other two adjectives before it in the string was an even split, with *magic little navy slippers* and *little magic navy slippers* both appearing in 40% of overall responses. This is further evidence to suggest that *little* is particularly susceptible to movement within an adjective string.

Of the remaining 20% of responses, 18% included *magic* in pre-head position, which is probably due to the influence of the 'fixed idiomatic collocation' (Dixon 1982: 24) carried by the concept of magic slippers, made famous in the classic 1939 Victor Fleming film *The Wizard of Oz*, based on the 1900 novel by L. Frank Baum. Similarly, the noun modifier *crystal* collocates very readily with the head *ball*, with the collocation *crystal ball* chosen by 92% of participants. The non-normative ordering of *small blue* was strongly dis-preferred, demonstrating that *small* is not as mobile syntactically or functionally as its near-synonym *little.*

24.

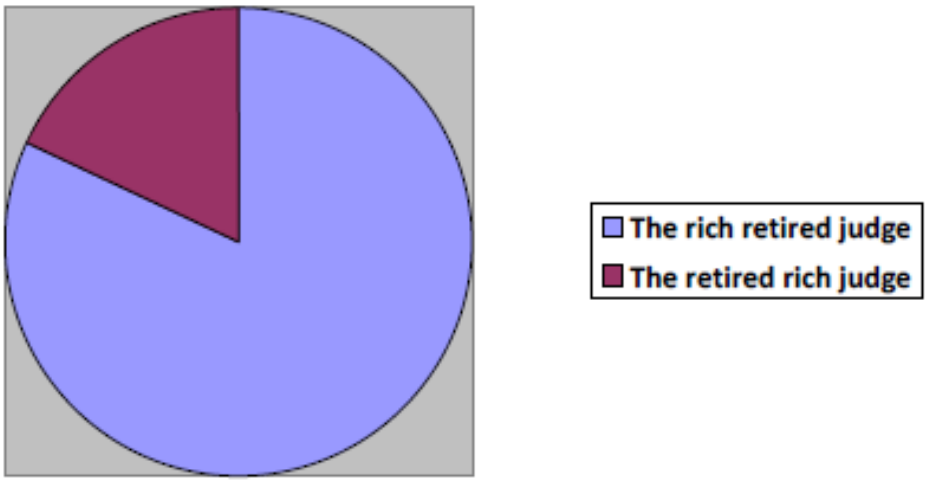
Orders	Incidence
The small blue crystal ball	**45**
The small crystal blue ball	4
The blue small crystal ball	1



Difficulty	Incidence. Difficulty Index: 1.31
1	28
2	5
3	3
No rating	14

25.

Orders	Incidence
The rich retired judge	41
The retired rich judge	9



Difficulty	Incidence. Difficulty Index: 1.31
1	24
2	10
3	1
No rating	15

Order theories such as Choi (1987) Bowers (1971), Goyvaerts (1968), Quirk and Greenbaum (1973)

and Scott (2002) typically have deverbal adjectives and participles placed closer to the head than more general descriptives such as *rich*, and the data support these claims, with 82% of participants suggesting that *the rich retired judge* is the most preferred order. This is a particularly interesting sequence as there is a strong adverbial relationship (Quirk et al 1985: 1339, Bache 1978: 74) between the two adjectives. This noun phrase could be paraphrased as *the judge retired when/because he was rich* or even the more simple *the judge retired rich*. The normative ordering reflects Quirk et al's (1985: 1341) notion of the 'natural order of recursive qualification', with the deverbal adjective closest to the head and the adverbial qualifier further away.

26.

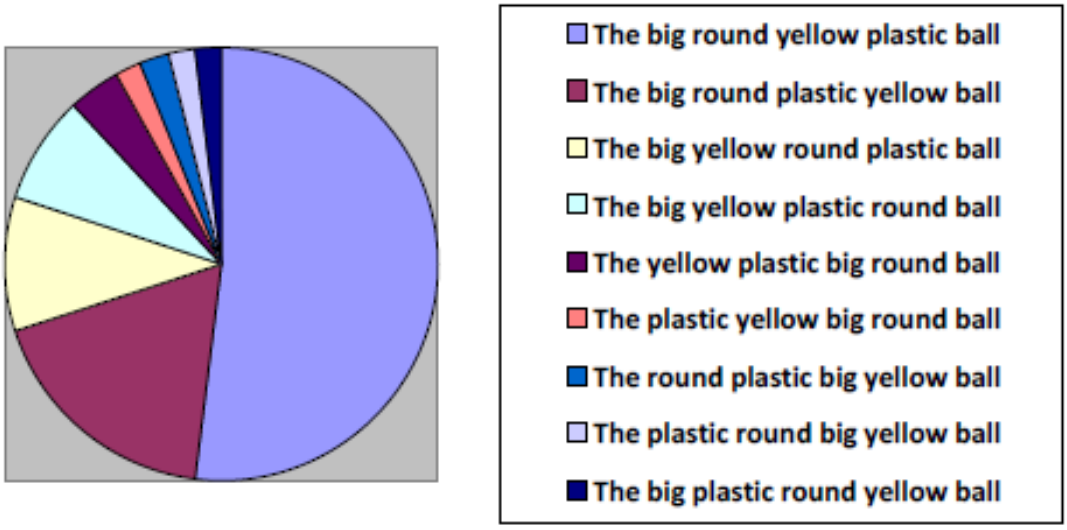
Orders	Incidence
The thin dark scary face	**17**
The dark thin scary face	11
The dark scary thin face	11
The scary dark thin face	7
The thin scary dark face	3
The scary thin dark face	1

Difficulty	Incidence. Difficulty Index: 1.74
1	16
2	11
3	7
No rating	16

This question is adapted from Quirk et al (1985: 1338) who suggest that *the thin dark face* and *the dark thin face* are both equally acceptable orderings, with no particularly preferred order. Not all semantic orderings reflect this assumption, as size typically precedes other physically descriptive adjectives, while subjective adjectives tend to precede more objective terms (see Chapter 2). It is surprising therefore that *scary*, the most subjective adjective of the three, is most commonly placed in pre-head position (56% of responses), and least likely to be placed in string-initial position (16% of responses). *Dark* precedes t*hin* in 58% of reponses, yet *the thin dark scary face* is the most commonly chosen order with 34% of participants considering it the most natural. The relatively even spread of responses here suggests that Quirk et al's (1985: 1338) suggestion that some sequences seem to have no clear preferred order is quite accurate.

27.

Orders	Incidence
The big round yellow plastic ball	26
The big round plastic yellow ball	9
The big yellow round plastic ball	5
The big yellow plastic round ball	4
The yellow plastic big round ball	2
The plastic yellow big round ball	1
The round plastic big yellow ball	1
The plastic round big yellow ball	1
The big plastic round yellow ball	1



Difficulty	Incidence. Difficulty Index: 1.82
1	13
2	14
3	7
No rating	16

This question combines adjectives of size (*big)*, shape (*round*), colour (*yellow*) and a noun modifier denoting physical property (*plastic*). The normative semantic order according to the work outlined in this chapter is *the big round yellow plastic ball* and this is comfortably the most common order with 52% of participants choosing this order as sounding the most natural. However, it has to be said that with almost half of the responses indicating that participants felt this was not the most natural order, there is considerable evidence here to suggest that such semantic-based order theories are only able to predict an ordering to a relative small degree. Nine different possible orders were suggested, a statistic which reflects suggests participants found it challenging to select a single preferred order, despite the medium difficulty rating of 1.82. If, as Vendler (1968: 126) suggests, the ordering in most noun phrases is almost completely fixed based on semantic categories, it would be reasonable to expect a far more dominant ordering and a much lower difficulty index.

One observation which can be vindicated based on these data is that *big* appears in string-initial position in 90% of responses and never appears in pre-head position. *Plastic* appears most commonly in this string-final position, with 62% of participants placing the noun modifier closest to

the noun. *Round* precedes *yellow* in 70% of responses, and in general there are patterns within every noun phrase which reflect semantic order theory. What seems to be the case is that the orderings become less predictable and more variable as more adjectives are added. It is hard to imagine any L1 speaker of English thinking *the yellow big ball* sounded anything other than strange unless particular stress was applied to *yellow* to indicate increased descriptive force, as if to determine a particular item out of a pre-specified subclass (Warren 1984: 285). Yet when two further adjectives are added, even though both adjectives fit perfectly into categories demarked commonly by semantic order theories, we find *yellow* preceding *big* in 8% of responses. While this is not a particularly high statistic, we can also note that *plastic*, an inherent Mod-III adjective and noun modifier, precedes *yellow* in 26% of responses and *round* in 18% of responses.

This observation that the ordering of adjectives becomes more complex and less predictable as more adjectives are added to the phrase is similar in some regards to Muir's (1972: 30) observation that there are 'discernible secondary structures' within polyadjectival nominal phrases. What seems to be happening in many of these phrases is that the adjective string is divided into smaller adjective compounds or bigrams which are subsequently ordered according to which sequence of bigrams sounds most natural. Here, the term 'adjective bigram' is used in accordance with Greenberg & Srinivasan (2003: 2), who use it to refer to two adjectives which appear adjacently. In every single response, the adjective string can be split into two bigrams, and *big* never occurs anywhere but in the initial position of one of these bigrams. Consider the following order, returned by 8% of participants:

57.	*the*	*big yellow*	*round plastic*	*ball*
	DET	bigram#1	bigram#2	N

While this phrase in its entirety would be considered, according to the majority of semantic-based order theories, as featuring a non-normative order due to the position of a colour term ahead of an adjective denoting shape or dimension, the order within each indicated bigram is normative. In bigram#1, size precedes colour and in bigram#2, shape precedes noun modifier. When considering the two created bigrams as distinctive units, bigram#2 carries more classificatory force (Warren 1984: 285) and denotes a more objective quality than bigram#1, and hence the relative positions within the string (Whorf 1937, Ghesquière 2009). The unmarked stress pattern in this phrase would see stress falling on the first syllable of each bigram. The same method of analysis can be used to examine perhaps this less favoured response, given by just 1 of the 50 participants:

58.	*the*	*plastic round*	*big yellow*	*ball*
	DET	ADJ-BIG#1	ADJ-BIG#2	N

This participant has collocated *big* and *yellow* in the same fashion as in the previous example, but has placed this bigram closer to the head than the other two adjectives. This movement towards the head is observed by Warren (1984: 285) who notes that 'the item with the highest degree of classificatory potency comes closest to the head', and in accordance with this observation, bigram#2 takes on a more categorising function. Bigram#1 in turn exhibits an increased descriptive force, with each adjective now providing additional information about a particular item within the established subclass of *big yellow balls*. The non-normative order of adjectives within bigram#1 may be due to the fact that the participants have split it up and rather see each adjective as providing independent, paratactic modification of the head. A pattern with stress falling on the first syllable of *plastic* as well as on *round* and *big* would seem less marked in this phrase than one with *round* being unstressed, suggesting a more likely phrase pattern of:

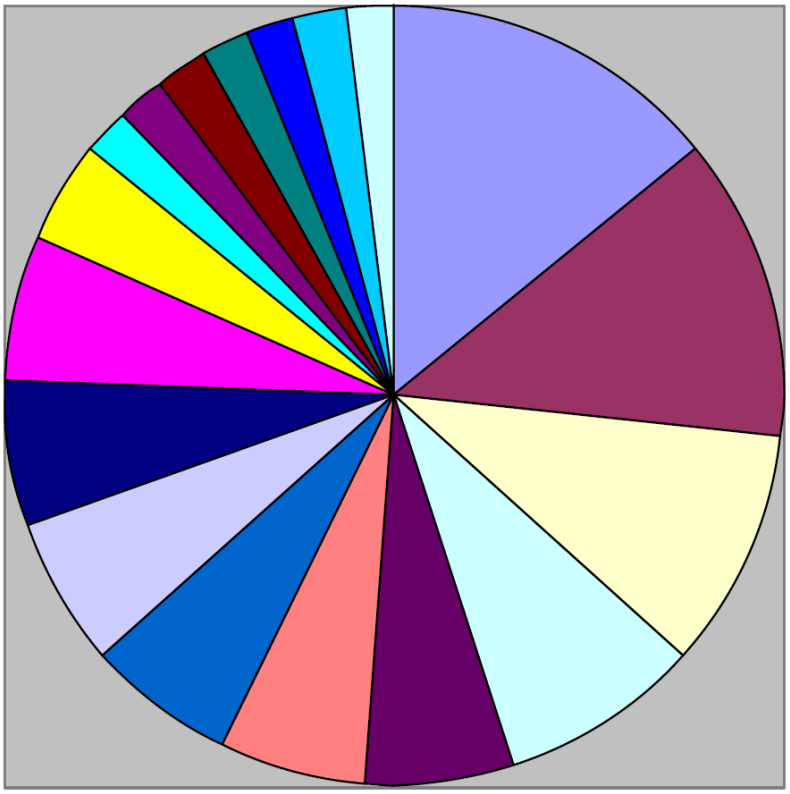
59.	*the*	*plastic*	*round*	*big yellow*	*ball*
	DET	ADJ	ADJ	ADJ-BIG	N

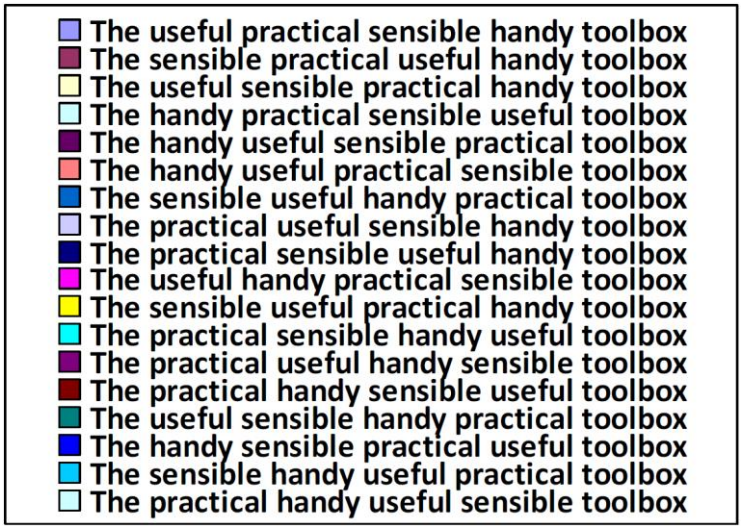
28.

Orders	Incidence
The useful practical sensible handy toolbox	7
The sensible practical useful handy toolbox	6
The useful sensible practical handy toolbox	5
The handy practical sensible useful toolbox	4
The handy useful sensible practical toolbox	3
The handy useful practical sensible toolbox	3
The sensible useful handy practical toolbox	3
The practical useful sensible handy toolbox	3
The practical sensible useful handy toolbox	3
The useful handy practical sensible toolbox	3
The sensible useful practical handy toolbox	2

The practical sensible handy useful toolbox	1
The practical useful handy sensible toolbox	1
The practical handy sensible useful toolbox	1
The useful sensible handy practical toolbox	1
The handy sensible practical useful toolbox	1
The sensible handy useful practical toolbox	1
The practical handy useful sensible toolbox	1
No response	1 (E027)

Difficulty	Incidence. Difficulty Index: 2.88
1	0
2	4
3	30
No rating	16





This question was included to investigate what happens when adjectives of similar semantic, functional and morphological properties are included in the same nominal phrase. This noun phrase is not particularly natural-sounding and requires participants to apply some degree of logic when deciding what the preferred order of the four adjectives would be. As Coates (1977) suggests, strings of four or more adjectives are very rare in English; in fact there are only around 400 instances of this pattern in the *BNC*. Many of these are from specialist technical registers, so asking participants to select a preferred order is a particularly challenging task, as is reflected in the extremely high difficulty index of 2.88. This high level of difficulty is also a result of the choice of adjectives.

The adjectives *useful, practical, sensible* and *handy* were chosen because they all provide evaluative judgements indicating a similarly positive value of the toolbox being modified. Equally, all these adjectives are derived from words which can function both as nouns or verbs. None of these adjectives have a particularly high emotional load (Bache 1978, Quirk et al 1985), but the one notable difference between them is that *useful* and *handy* only have two syllables while *practical* and *sensible* have three. According to Bache (1978: 76), shorter adjectives should precede longer adjectives if they are from the same morphological and functional class. This would suggest two distinctive bigrams organised and ordered based on syllabic length of *useful handy* and *practical sensible,* with reversible orders within each bigram. Interestingly, only 38% of participants returned a response which organised the adjectives into bigrams based on syllabic length, and less than half of these (18% of all participants) had the two shorter adjectives in string-initial position.

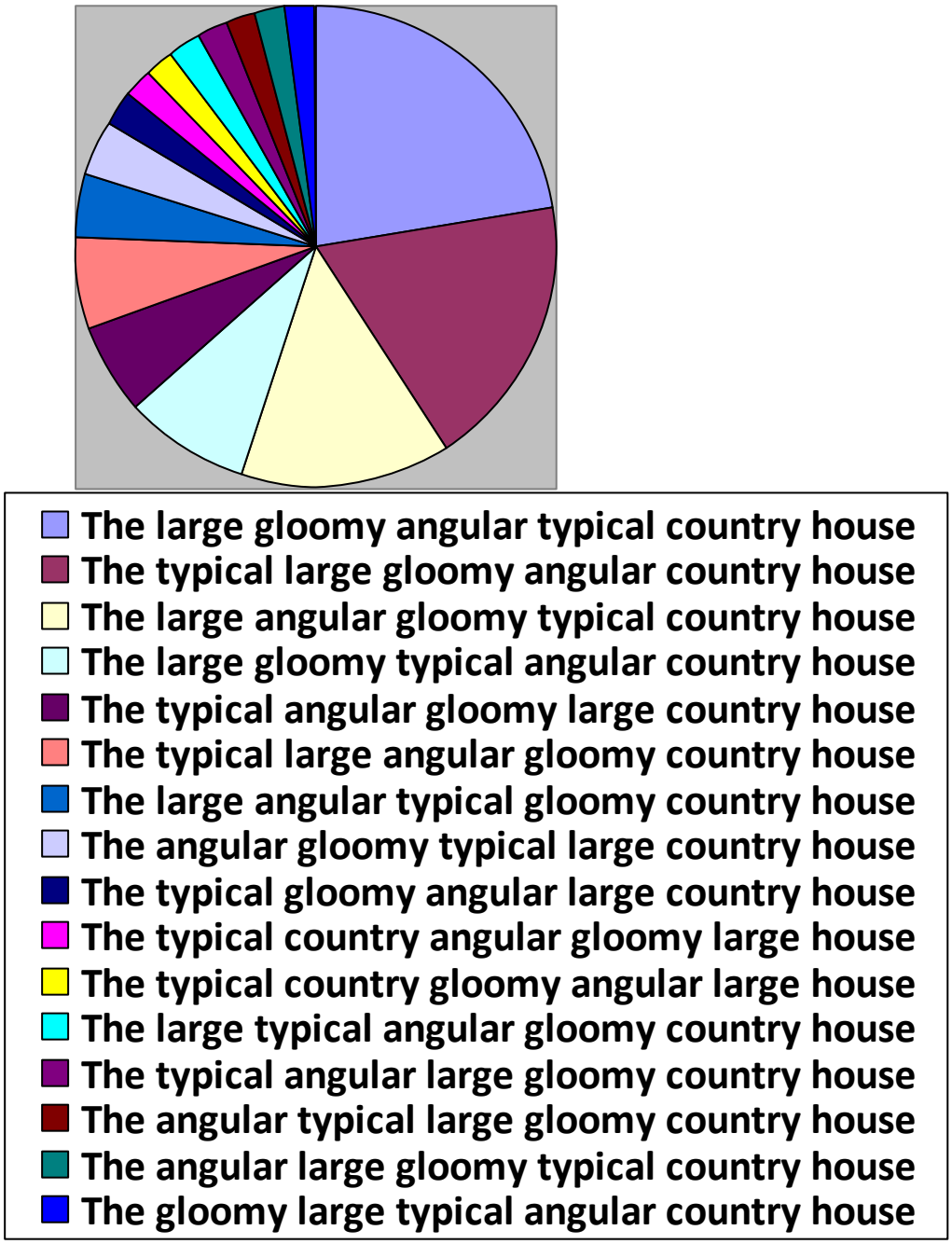
Of the 24 potential possible orders for this question, 18 different sequences were suggested by participants as sounding most natural, but seven of these occur just once and only three orders were suggested by more than 9% of the participants. The most obvious pattern here is that the order is

extremely variable and there is no real dominant order, with *the useful practical sensible handy toolbox* being the most popular response, selected by only 14% of participants. This reflects the claims made by many theorists (Quirk et al 1985, Bache 1978, Strang 1975 and others) that many strings do not have a fixed order of adjectives. Beyond this observation, it is interesting that *handy* appears in pre-head position in all of the three most popular responses and in more than half of all responses given (52%). *Handy* also features in string-initial position in 22% of responses, compared to featuring less commonly in the centre of the string (appearing equally at 12% in second and third position in the string). This could be to do with the fact that *handy* is a more colloquial term than the other three words (*OED Online*) which sound more formal and serious. Due to suggesting a less specific positive quality of the head, it may have seemed less suited to forming a close collocation with one of the other, more specific and formal-sounding adjectives, and hence remains on the periphery of the phrase.

29.

Orders	Incidence
The large gloomy angular typical country house	**11**
The typical large gloomy angular country house	9
The large angular gloomy typical country house	7
The large gloomy typical angular country house	4
The typical angular gloomy large country house	3
The typical large angular gloomy country house	3
The large angular typical gloomy country house	2
The angular gloomy typical large country house	2
The typical gloomy angular large country house	1
The typical country angular gloomy large house	1
The typical country gloomy angular large house	1
The large typical angular gloomy country house	1
The typical angular large gloomy country house	1
The angular typical large gloomy country house	1
The angular large gloomy typical country house	1
The gloomy large typical angular country house	1
No response	1 (?)

Difficulty	Incidence. Difficulty Index: 2.29
1	1
2	19
3	13
No rating	16



This question is adapted from Quirk et al (1985: 1341) whose example 'the two typical large country houses' is seen 'clearly to correspond to the 'natural' order of recursive qualification'. It is suggested that *typical* will logically precede *large* based on the assumption that 'in order to be typical, country houses must be large'. This analysis fits in with the semi-adverbial relation suggested by Bache (1978: 74), Huddleston and Pullum (2002: 562) among others. However, the non-normative ordering in *the large typical country house* also sounds perfectly natural, perhaps due to the various other qualities typical of country houses.

I investigate this noun phrase by including the additional adjectives *gloomy* and *angular*, both of which are qualities one might associate with big country houses, due to their prevalence in gothic literature. Based on Bache's (1978) zone-based analysis, it was expected that *country* would appear in pre-head position due to its word class as a noun modifier (Coates 1977) and its likelihood to form a nominal compound with the head. This is indeed the case with 96% of responses placing forming the nominal compound *country house* in head position. For this reason, the order within the string will be considered based on the four adjectives *typical, large, gloomy* and *angular* modifying the compound nominal head *country house.*

Quirk et al's (1985: 1341) suggestion that *typical* will precede other adjectives which give the basis for this judgement would lead to a hypothesis that this adjective should appear in string-initial position. This leaves the Mod-II string of *large, gloomy* and *angular,* of which *large* would be expected to come first due to its semantic subclass of being a size adjective, and its short syllabic length (Bache 1978: 76, Quirk et al 1985: 1341). *Gloomy* would then be expected to precede *angular* based on its more subjective nature (Whorf 1937). This would lead to an assumed normative order of *the typical large gloomy angular country house*.

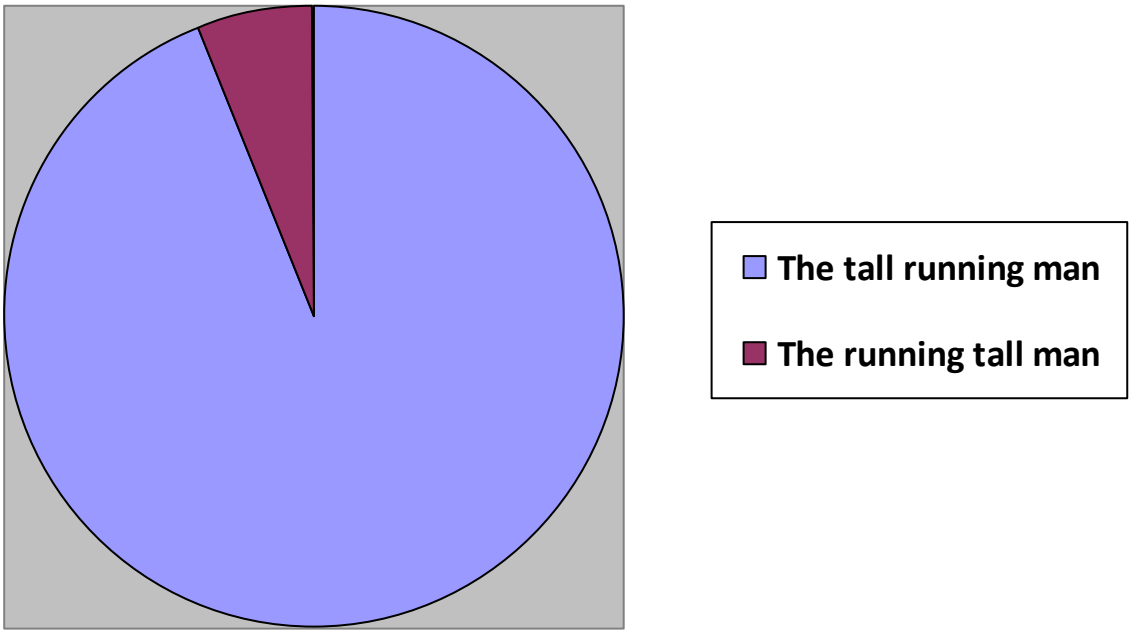
This expected ordering was only selected by 18% of participants as being the most natural-sounding but this still made it the second most popular response after *the large gloomy angular typical country house,* both of which sequence the Mod-II string as expected. In contrast with Quirk et al's suggestion that the natural order of recursive qualification determined that *typical* would precede *large*, the opposite is more commonly the case in this example. *Large* appears in string-initial position in 50% of responses while *typical* appears first in the string in just 38%. Interestingly, *typical* also appears in string-final position in 38% of responses, an equivalent amount to appearances in its more expected string-initial position. This suggests that participants generally (76%) separated *typical* from the other three more independently descriptive Mod-II adjectives, but were divided on whether to consider it a Mod-I specifying adjective or a Mod-III classifying adjective. I would not consider these data as being inherently contradictory to Quirk et al's observations, but rather that they provide a modification and development of their analysis.

Quirk et al (1985: 1341) suggest that *typical* will precede adjectives which explain the nature of this judgement due to the ''natural' order of recursive qualification'. While this is true when indicating an adverbial relation between modifier and head, a normally evaluative adjective such as *typical* may appear after a Mod-II string with increased classificatory strength, and modify the head more independently from other more specific descriptive adjectives.

These last two questions have an average difficulty index of 2.59, suggesting that these were the two questions for which participants found it most difficult to select just one order. They also include the highest number of adjectives in any question (question 29) and the highest number of adjectives from one morphological or semantic subgroup (question 28). This evidence to support the argument that ordering becomes more difficult with longer chains is developed later.

30.

Orders	Incidence
The tall running man	**47**
The running tall man	3

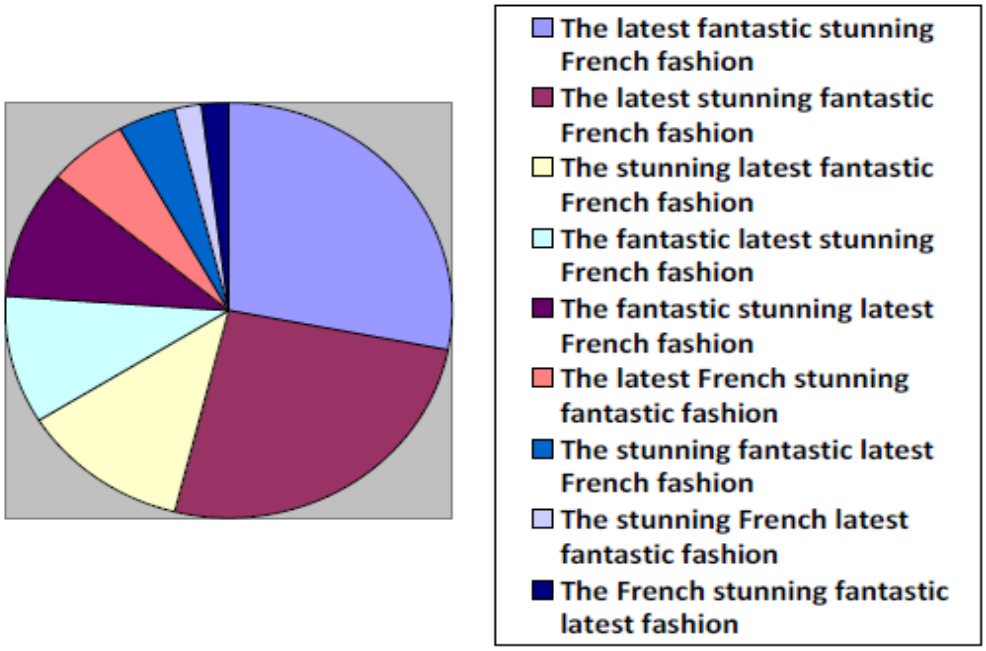


Difficulty	Incidence. Difficulty Index: 1.16
1	27
2	2
3	3
No rating	18

Whilst noun phrases containing four and five adjectives have been shown to cause participants considerable difficulty when selecting an ordering, this adjective bigram proved less challenging, with an average difficulty index of 1.16. This example was chosen as it combined a participle adjective with a strong verbal quality (Laskova 2007: 125) with a common adjective of size. *Running* denotes a very temporary action rather than the more permanent state suggested by some more inherently adjectival participles such as *loving* or *boring*. *Tall* can be said to be a far more permanent state; although a man's height changes during his lifetime, once he has become tall, this rarely changes to any considerable extent. It is unsurprising, therefore, that the data indicate that *the tall running man* is strongly preferred to *the running tall man*.

31.

Orders	Incidence
The latest fantastic stunning French fashion	**14**
The latest stunning fantastic French fashion	13
The stunning latest fantastic French fashion	6
The fantastic latest stunning French fashion	5
The fantastic stunning latest French fashion	5
The latest French stunning fantastic fashion	3
The stunning fantastic latest French fashion	2
The stunning French latest fantastic fashion	1
The French stunning fantastic latest fashion	1



Difficulty	Incidence. Difficulty Index: 2.05
1	7
2	18
3	9
No rating	16

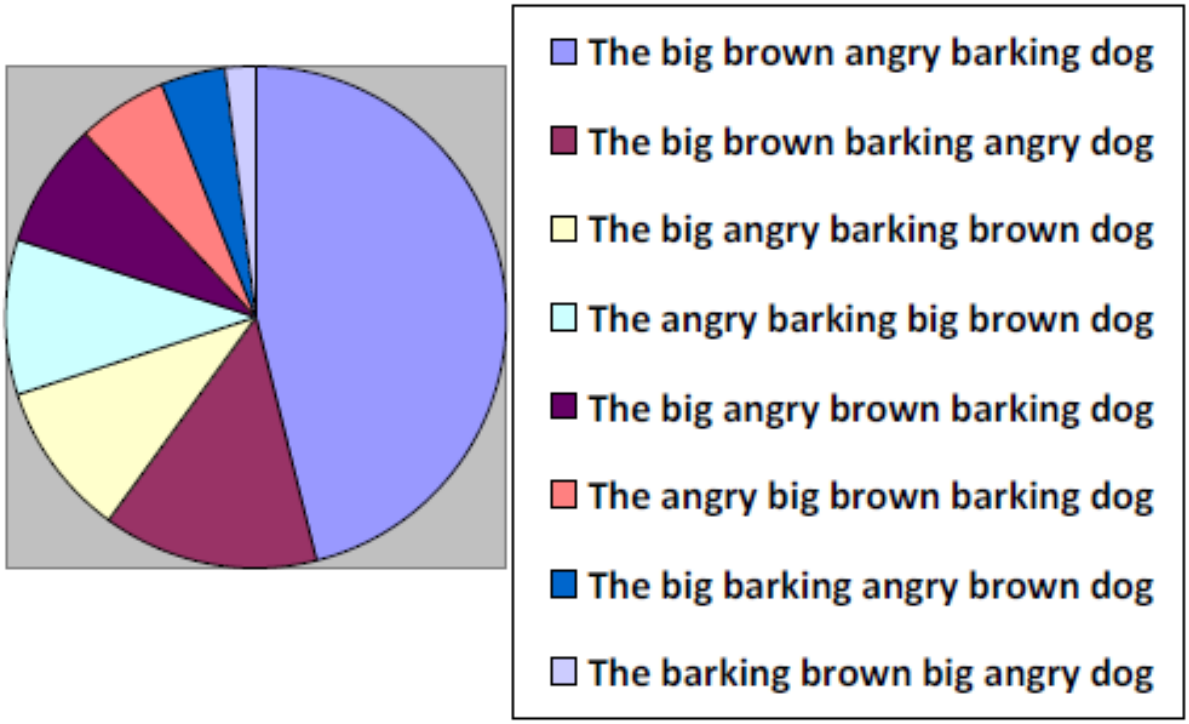
This is a complex question which, with a medium difficulty index of 2.05, proved problematic for some participants, 18% of whom labelled it as being difficult. There is one central adjective included, *fantastic*, and a near-synonymous participial adjective *stunning*. This is more 'adjectival' (Laskova 2007: 125) than *running* in the previous question or *barking* in question 32. *Latest* is a superlative adjective in morphological form, but has the function of a Mod-I specifying adjective (Bache 1978) and inhabits the same semantic area as ordinal numerals, which denote 'positions in a sequence' (Nelson 2001: 76). *French* is an adjective of nationality or more specifically 'origin' (Warren 1984: 284) and is the only Mod-III adjective in this sequence, reflected by its appearance in pre-head position in 90% of responses.

The Mod-I adjective *latest* appears in string-initial sequence in the two most popular orderings, but in only 60% of responses in total. Despite being a superlative adjective, it has little in common with its ungraded form *late*, which is one of relatively few adjectives (such as *old*) which have variable meanings depending on whether it is used in attributive or predicative function (see Quirk et al 1985: 428 on this). In its superlative form, it carries a meaning more in line with *the most recent*, although *recent* and *late* are not synonyms when ungraded.

While the two most popular orders feature *latest* and *French* in their normative positions at opposite ends of the string, the order of *fantastic* and *stunning* is variable. 28% of participants selected the sequence with *stunning* following *fantastic*, while 26% preferred the reverse order. This would indicate that, despite its verbal morphological form, participants in this study considered *stunning* equivalent to *fantastic* in terms of being a central, descriptive adjective. This supports the claims by Laskova (2007), Quirk et al (1985) and Bache (1978) that some participles are more adjectival than others, while contradicting suggestions such as those made by Alexander (1990) and Spankie (1987) and Goyvaerts (1968) who consider participles indiscriminately as derived forms and place them closer to the head. This is a consideration which above all supports a semantics-oriented approach to explaining adjective order.

32.

Orders	Incidence
The big brown angry barking dog	23
The big brown barking angry dog	7
The big angry barking brown dog	5
The angry barking big brown dog	5
The big angry brown barking dog	4
The angry big brown barking dog	3
The big barking angry brown dog	2
The barking brown big angry dog	1



Difficulty	Incidence. Difficulty Index: 1.66
1	16
2	14
3	5
No rating	15

This is one of the first noun phrases I used when first investigating adjective ordering and is particularly relevant as it includes four modifiers which are commonly used to describe dogs, but have very different semantic content. *Big, brown* and *angry* are all central adjectives but convey size, colour and personality respectively. *Barking* is a present participle adjective which would be placed strongly at the verbal end of the continuum, as it denotes a very temporary action, rather than a more stative participle such as *stunning* in the previous question. This particular participle was included as it has a semantic link with *angry* as the action of barking is associated with the state of being angry.

The expectation for this phrase was that speakers would typically group these two adjectives together due to an implicit subordinated adverbial relationship (Quirk et al 1985: 1338-9), whereby the dog is barking *because* it is angry. I also expected that participants would group *big* and *brown* together in the order *big brown* due not only to the tendency that adjectives of size and colour inhabit opposite ends of a string of Mod-II adjectives (Bache 1978, Dixon 1982 and others), but also due to the commonplace nature of size-colour modification strings in western culture. These strings are commonly found in nursery rhymes and cartoons (*Little Red* Riding Hood, Clifford the *Big Red* Dog), and there is a tendency to describe animates using this semantic collocation (big white hunter, little green men). Additionally, these terms tend to be very short, often monomorphemic words which are often drawn together due to commonly being unstressed (Scott et al 1968: 78).

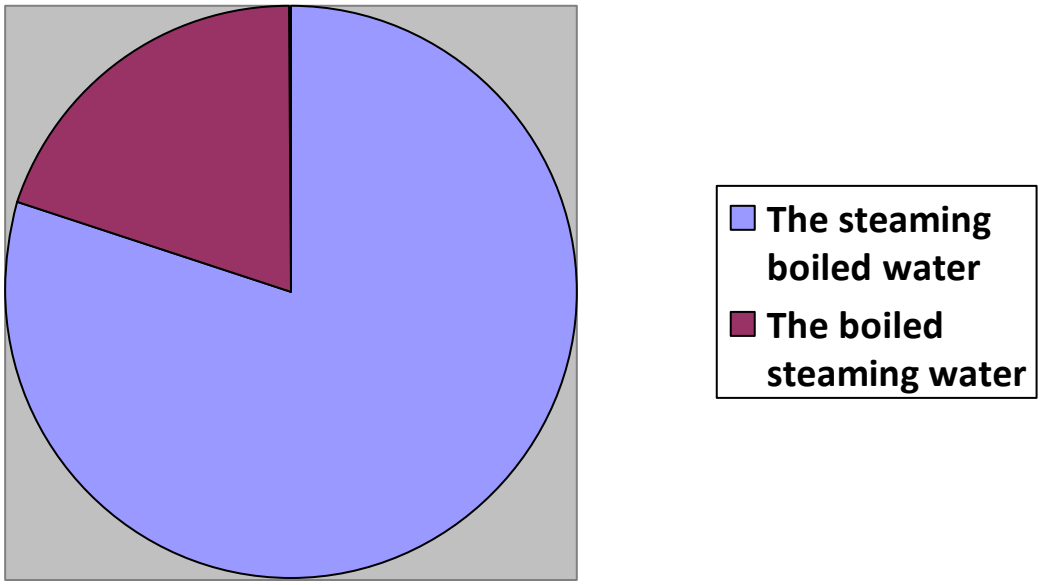
It was therefore expected that *the big brown angry barking dog* was selected as the most popular ordering, with 46% of participants returning this sequence, in a reflection of the permanent-temporary distinction referred to in question 30. In a similar fashion to *the big round yellow plastic ball* in question 27, there is a dominant stress pattern to this phrase which would suggest the division of this four-word string into two adjective bigrams. With stress fixed on *big* and the first syllable of *angry*, this most popular order allows an adjective denoting character and personality or what Dixon (1982: 24) terms, perhaps confusingly in this example, 'human propensity', to occur after an adjective of colour. In a shorter string, *the angry brown dog* would be strongly preferable to *the brown angry dog*, but when combined with other adjectives which bear a syntactic and semantic link, this order is reversed with 62% of participants placing *brown* further from the head than *angry* in this example.

Big, as in question 13, is strongly preferred in string-initial position, with 82% of responses placing the size adjective at the beginning of the string. The collocation *big brown* also appeared in 76% of responses, lending support to the suggestion that size and colour adjectives are strongly preferred

collocations. Even more popular than this, however, is the collocation of *angry* and *barking*, with 82% of participants choosing to place these adjectives next to each other.

33.

Orders	Incidence
The steaming boiled water	**40**
The boiled steaming water	10



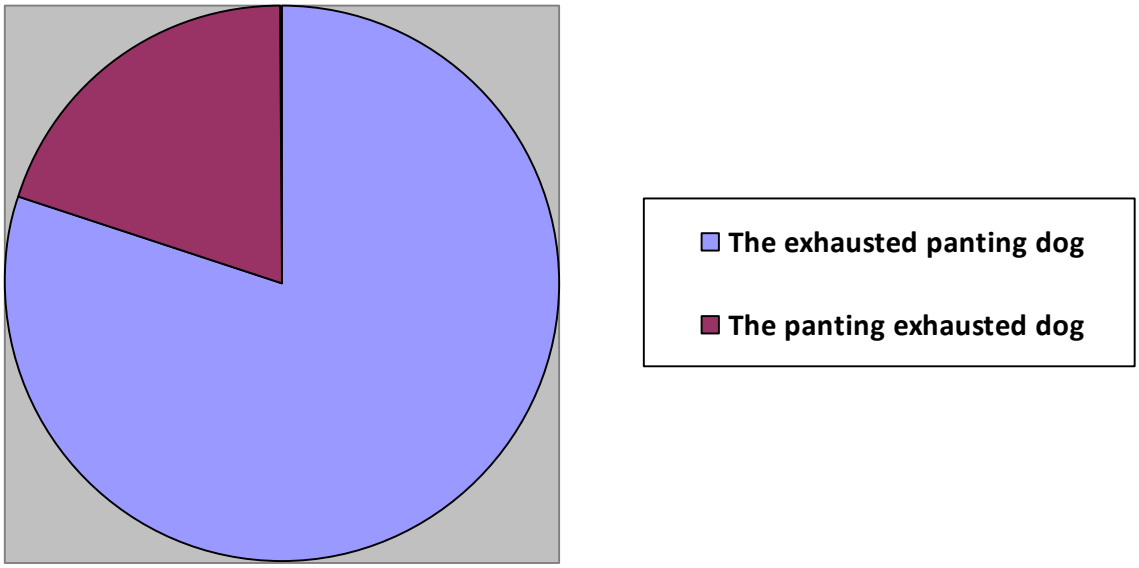
Difficulty	Incidence. Difficulty Index: 1.32
1	24
2	9
3	1
No rating	16

This question features two participle adjectives, one which is a present participle *steaming* and one which is a past participle *boiled*. Interestingly, the verb *boil* is one of only two verbs in Spanish which allow the present participle to function as an attributive adjective (*hirviendo* 'boiling', the other being *ardiendo* 'burning'- Brodsky 2005: 121), which suggests that it is strongly adjectival, in Spanish at least. In this example, the past participle comes closer to the head, with the order again reflecting

that of 'the natural order of recursive qualification' (Quirk et al 1985: 1421). Laskova (2007: 1) and Cinque (2005) both note that when multiple participial adjectives occur in strings, they tend to do so in stages which reflect the order in which the actions they denote have taken place. In this phrase, the steam has appeared as a consequence of the boiling process and is hence a more recent and temporary state. Even if the water cools down and stops steaming, it will still have been boiled, and the order reflects the timing and permanence of the actions denoted by the participial adjectives. The reverse order suggests stacked modification, with each adjective functioning independently.

34.

Orders	Incidence
The exhausted panting dog	**40**
The panting exhausted dog	10

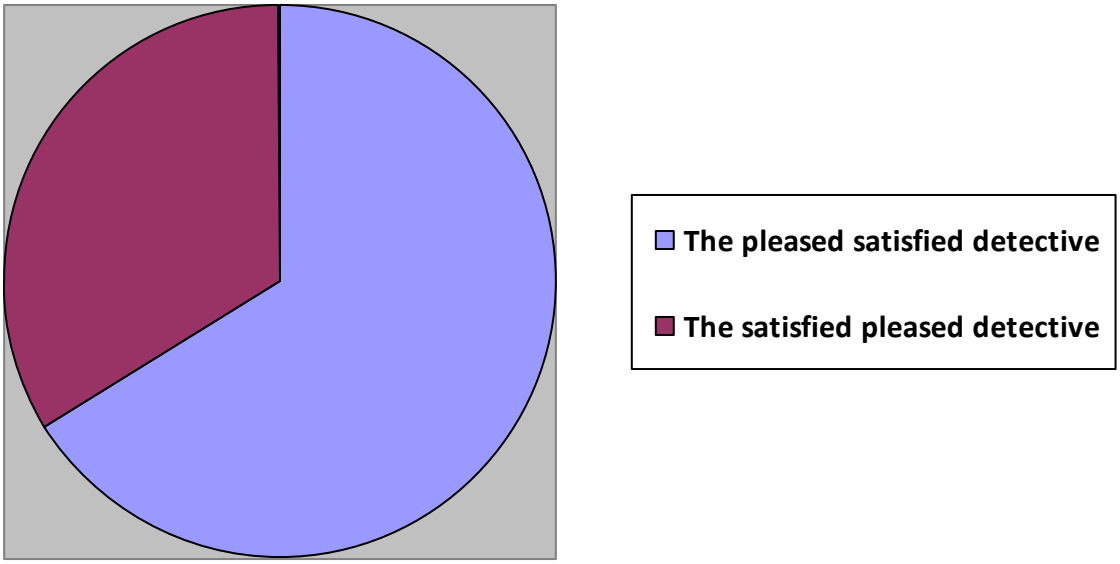


Difficulty	Incidence. Difficulty Index: 1.28
1	26
2	10
3	0
No rating	14

The same proportion of participants considered *the exhausted panting dog* preferable as an order to *the panting exhausted dog*. This is interesting due to the fact that the present participle *steaming* preceded the past participle *boiled* in example 33, while in example 34 this order is reversed with 80% of participants placing the present participle closest to the noun. This suggests firstly that it is not realistic to predict the ordering of participles based simply on whether they are present or past participles. One possible explanation for the variation here is that *boiled water* is a common 'fixed idiomatic collocation' (Dixon 1982: 24), with the modifier here having particularly high 'classificatory force' (Warren 1984: 284). In example 34, this is not the case; neither participle combines readily with *dog*, although there is once again an implicit adverbial relation here, in that the dog is panting because it is exhausted. However, *exhausted* is more inherently adjectival than *panting*, in that it denotes a state which is synonymous with more central adjectives such as *weary* and *tired*. It can also be intensified (*very exhausted*) and compared (*more exhausted*), both of which are tests proposed by Laskova (2007) and Quirk et al (1985: 415) for determining the adjectival nature of participles. It is this increased 'descriptive force' (Warren 1984: 285) which is the most likely reason for its predominantly string-initial position.

35.

Orders	Incidence
The pleased satisfied detective	**33**
The satisfied pleased detective	17



Difficulty	Incidence. Difficulty Index: 1.94
1	9
2	19
3	7
No rating	15

Question 35 features two near-synonymous participial adjectives which could be considered true adjectival participles based on tests proposed by Laskova (2007) and Quirk et al (1985) above and it might be reasonable to expect a somewhat variable order. Although there is a greater degree of variation than in the previous two questions, the order of *the pleased satisfied detective* is still fairly strongly preferred with roughly two out of three participants considering this the more natural-sounding sequence. This may be because p*leased* suggests a more generally happy state than *satisfied*, which is more closely linked to a particular agent or cause of this satisfaction. This would suggest that *pleased* is more adjectival than *satisfied,* which bears closer links to its verbal origin. In each of these examples, there are considerable selections of the alternative order, which suggests that this trend is in no way obligatory and only a 'preferred' order, with both being acceptable.

An additional test I propose for determining the degree to which a past participle is adjectival or verbal in nature is to investigate its potential to form adjective phrases using prepositional phrases featuring certain prepositions as heads, such as *by, with* or *about*. The number of times *pleased* and *satisfied* and the central adjective *happy* appear with each preposition in the BNC is indicated below:

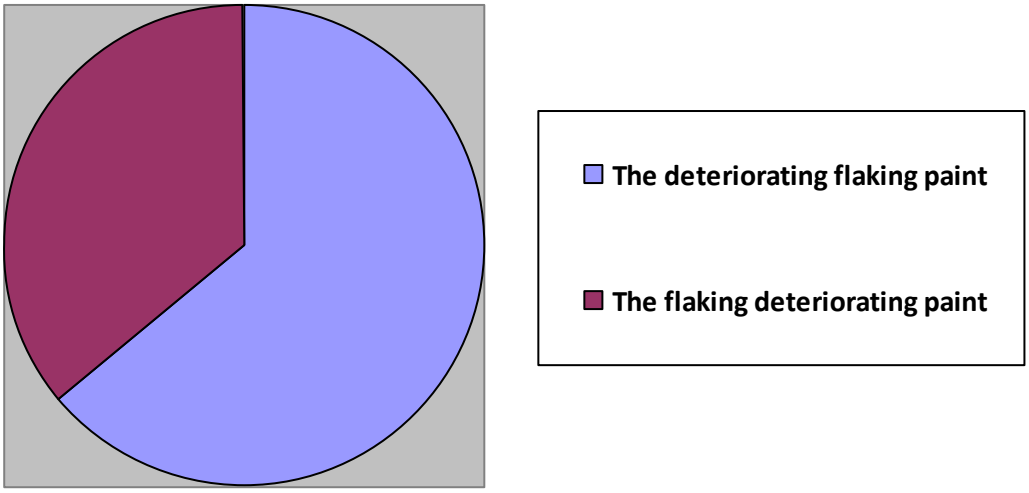
Adjective	Preposition	Tokens in BNC simple search	% of total tokens
pleased	*by*	88	9%
	with	825	80%
	about	115	11%
satisfied	*by*	130	17%
	with	643	82%
	about	10	1%
happy	*by*	10	0.7%
	with	1171	80%
	about	288	20%

Table 5.1: Frequency of Tokens of APs in the BNC

These data suggest that *satisfied* is twice as likely to be followed by the preposition *by*, while *pleased* is around ten times as likely as *satisfied* to be followed by *about*. As the preposition *by* suggests an element of agency, while *with* and *about* are more indicative of a state, these prepositions provide a useful test of the descriptive force of a participial adjective. All three adjectives are commonly followed by *with*, while *about* most commonly follows *happy* (20%) and *by* is most commonly collocated with *satisfied* (17%). As Warren (1984: 285) suggests, the closer an adjective is to having 'full descriptive status', the further away from the head it is likely to appear, as is the case in this example with *pleased*.

36.

Orders	Incidence
The deteriorating flaking paint	**32**
The flaking deteriorating paint	18



Difficulty	Incidence. Difficulty Index: 1.71
1	12
2	21
3	2
No rating	15

In this example, the reverse is true to the order in question 35, with neither of these participles being gradable or readily open to intensification. Both are strongly indicative of the verbs from which they derive and there is a clear adverbial relationship between the two: the paint is flaking off the wall because it is deteriorating. This adverbial relationship could even be developed further by suggesting that it is the extent to which the paint is flaking which is being described by the adjective *deteriorating* i.e. that the flaking is getting worse.

The most logical explanation as to why 64% of participants considered *the deteriorating flaking paint* the more natural-sounding phrase is that the two adjectives denote different kinds of observations. The adjective *flaking* remarks upon an objective, apparent and physically observable state, while *deteriorating* suggests a more subjective judgement based on an awareness of the progression of the flaking up to the time of the utterance and beyond. Quirk et al (1985: 1341) suggest that 'a subjective/objective polarity' is the most salient feature in adjective ordering, while Sproat and Shih (1988) and Belke (2006) suggest that the more apparent a property is, the closer it will be placed to the head noun. These ideas are linked, as subjective properties generally require more consideration than objective qualities such as colour, which are more instantly noticeable. In this case, the flaking appears closer to the noun as it is more apparent than the deterioration.

37.

Orders	Incidence
The demoralising disintegrating broken biscuits	20
The disintegrating demoralising broken biscuits	11
The broken disintegrating demoralising biscuits	9
The broken demoralising disintegrating biscuits	6
The demoralising broken disintegrating biscuits	3
The disintegrating broken demoralising biscuits	1

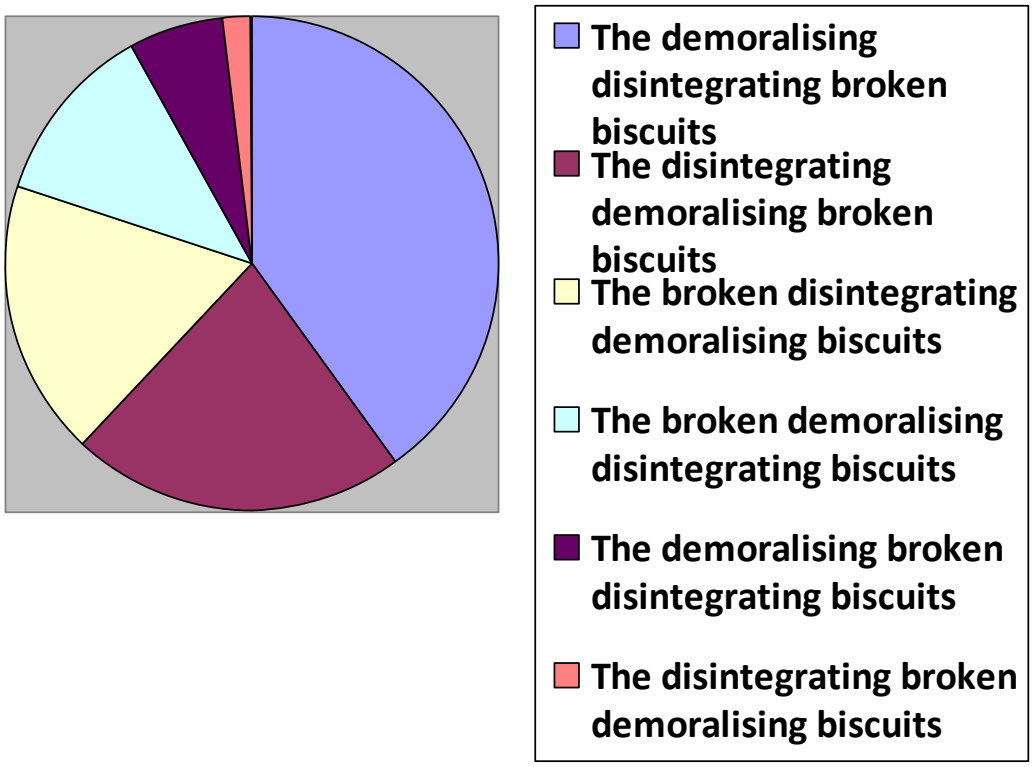
A similar observation can be made here, with the level of apparency seemingly variable between the three participial adjectives in question 37. Although there is considerable variation in the responses given by participants here, the most popular response at 40% was *the demoralising disintegrating broken biscuits.* This question had a considerable difficulty index of 2.21, suggesting that participants found it less easy to order than the previous few questions which also featured strings of participles

but varied between 1.28 and 1.94. This might be explained by the fact that this example contained three participles rather than two, but it does also involve a more complex adverbial relationship and a greater variety of functions.

Broken appears most commonly in pre-head position (62%) and reflects the fact that *broken biscuits* is a common collocation in British English (Dixon 1982: 24). This also reflects Sproat and Shih's (1988) observation that the most apparent quality comes closest to the head. As *broken* is a relatively straightforward and easily observable quality, it would be expected to appear closer to the head than *demoralising*, which requires a subjective judgement. D*isintegrating* is more objective than *demoralising*, but requires greater skills of observation than those required to judge the biscuits as being *broken*. There is also an element of logical temporal order involved in the co-ordination of these three participles: the biscuits were broken first, then they began to disintegrate, which leads finally to the judgement that this situation is demoralising.

The variation in responses is best explained by the confusion caused by the different referential functions of *demoralising* and *disintegrating*. The adjective *disintegrating* directly modifies the head noun *biscuits* i.e. it is the biscuits which are disintegrating. *Demoralising,* however, does not refer explicitly to the biscuits, but more to the situation i.e. it is demoralising that the biscuits are disintegrating. Ferris (1993: 24) refers to this distinction as adjectives having 'ascriptive function' or 'associative function', while Quirk et al (1985: 435) differentiate between 'inherent' and 'non-inherent' meanings, with properties which relate directly to the noun expected to appear closer to the head than those which modify something other than the head.

It is possible that the morphological similarity of the two present participles has led to more variability than might be expected in this sequence, and this may also be a result of the fact that both *demoralising* and *disintegrating* are relatively infrequent words, occurring less than 200 times in the BNC between them. The complexity of the adverbial relationship between these two modifiers as well as their mutual obscurity and morphological structure may be the source of the unexpectedly broad variation in orderings. All six potential orders were suggested by at least one participant, and the high difficulty index suggests that some responses here might be a result more of guesswork than of considered judgement. This was, after all, the final order participants were asked to complete and fatigue and boredom may well have played a part in the unexpected results. Even despite these cases, the suggested normative order was still strongly dominant, although the extent to which particular orders are preferred is not quite so predictable as often claimed.



Difficulty	Incidence. Difficulty Index: 2.21
1	6
2	14
3	13
No rating	17

5.3 Qualitative Data and Discussion

SECTION C

Greenberg and Srinivasan (2003: 1) suggest that 'intuitively, some [adjective] orderings seem to "sound better" than others [but] it is not easy for a human to explain why he or she prefers one ordering or another'. The authors do not expand on this point in great detail, and this is a suggestion which I chose to investigate as part of my research. By asking all participants what factors they felt affected their preferred orders, I am able to evaluate whether the order theories outlined in this chapter are reflected in my sample's experience of selecting the most natural sounding sequence for each adjective string. In addition to this, I am also able to consider whether there are other potential contributory factors which have not been previously been proposed. The final three questions were designed to elicit more qualitative data, being deliberately open and asking the participants to reflect on the process of sequencing adjectives in a string.

The first question in this section simply asked how difficult the participant found it to decide upon the most natural order for the phrases in the previous two sections. The second question asked what factors participants felt affected their choices. I expected the responses to these questions to overlap to some extent, with participants beginning to discuss which factors made it more difficult in question 38, and then continuing to relate different aspects of adjective combinations to varying levels of difficulty. For both questions, the results were reproduced in a table form such as is exemplified in *Table 5.2* below, before recurring ideas were identified within the data and responses were grouped so as to allow for trends to be observed. The responses to each question are discussed separately, with a more general discussion presented thereafter. The full version of the table which includes every response given by the 50 participants is included in the appendices.

Participant No.	38. How difficult overall was it to decide upon the most natural order?	39. What factors do you think affect your choice of order?
E002	Very, because some of the words I wouldn't naturally use together and it is hard to imagine what you would say.	Size generally just followed by colour but sometimes there is more than one possible order.

Table 5.2: Example of Participant Responses

In question 38, participants are asked 'how difficult overall was it to decide upon the most natural order?' There was an interesting variety of responses given to this question, with some participants considering it particularly difficult to suggest a natural order for the given phrases, while others

thought it was relatively straightforward. The questionnaire was designed so that some questions provided a strongly normative ordering, while others were more ambiguous, context-sensitive and possessed a number of possible sequences. This feature is reflected in the results, which contain a number of references to particular features of noun phrases which lead to selecting a natural-sounding order of adjectives being more difficult than in others. The range of responses is indicated in *Table 5.3* below.

Comment	%	Participants (key ones in bold)
More adjectives make it more difficult	36	E008, E010, E012, E013, E016, E020, E030, E031, E034, E040, E041, E056, E057, E089, E093, E096, E097, E110
Easy/Quite easy	16	E008 (reasonably easy), E031 (quite easy), E038 (quite easy), E041 (generally easy), E059, E075, E082, E151 (all not very difficult)
Not too difficult	16	E010, E011, E017, E018, E029, E034, E042, E062
Sometimes easy, sometimes difficult	14	E005, E007, E027, E061, E092
Difficult when words don't seem to fit together	14	E002, E027, E034, E042, **E058**, E096, E097
Came naturally, had to say it out loud	12	E020, E029, E036, E064, E091, E151
Quite difficult	10	E004, E032, E037 (slightly difficult), E039 (fairly difficult), E097
Difficult	10	E002, E005, E027, E061, E092
Section B harder than Section A	10	E004, E011, E024, E030, E093
Less common words are more difficult to order	8	E007, E091, E096, **E091** (Short, simple adjectives are easier)
Difficult due to lack of context	6	E007, E056, E086
Methodology had an effect (sequence used in question)	6	E056, E057, E059
Similar meanings, paractactic sequences hard to order	4	E008, E033
Participles were difficult	2	E013
Former is difficult to place	2	E057

Table 5.3: Participant Responses to 'How difficult was it to predict a natural order?'

Many of the responses to this question made general non-specific judgements of the relative difficulty of questions such as 'quiet easy'. A considerable number of responses noted that there was variable difficulty; 10% observed that section B (which focussed on participles and semantic-based order theory) proved more difficult than section A (which was designed to test more function-based analyses such as those proposed by Bache 1978). The most common observation of this kind was that the number of adjectives in a sequence affects the level of difficulty participants experienced when suggesting a natural-sounding order. 36% of responses indicated that the difficulty increased if there were more adjectives in a string. These responses suggest that adjective strings with more than two adjectives were more difficult or complex than those with just two. This reflects Coates' (1977: 10) observation that 'sequences of two modifiers are far more common than sequences involving larger numbers'. Coates also suggests that, in her data 'there are so few sequences containing four or more items that they cannot be said to represent a pattern' (*ibid*).

It is to be expected that speakers will find it more difficult to order sequences with three, four or even five premodifiers as this is not something which occurs very often in natural language. As E020 suggests, the presence of 'so many adjectives' can make the ordering of a phrase difficult, while E027 notes that long strings of modification made some phrases sound 'strange'. Interestingly, E089 notes that 'when there were fewer [adjectives], it seemed like there was a natural order', with an implicit suggestion that the order becomes less easy to determine as adjectives are added. This is a point which is also suggested by E110 who even reflects that more complex strings are less likely to make sense 'in terms of grammar'.

The logic behind the idea that phrases become more difficult as more adjectives are added is rather complex. One obvious reason noted by several participants is that there are more options in terms of the different potential sequences for longer strings; two adjectives only admit two potential orders, while strings of three adjectives admit six, four-adjective strings allow for 24 and a string of 5 adjectives potentially has 120 different orderings. As has been noted in *4.3*, the order of adjectives is often much more variable than is commonly suggested, meaning that ungrammatical orders are relatively rare. A string of two adjectives only needs one ordering to sound awkward for the sequence to have a clear normative order; a string of three adjectives would need five of its six potential orderings to sound ungrammatical in order for the same to be true. This leads to a logical conclusion that it will be more difficult for participants to identify one dominant order in phrases with more adjectives in a string.

This notion is reflected in the average difficulty indices (ADI) returned for questions including string with varying numbers of adjectives. For each question, participants were asked to rate the difficulty of the question as being easy (1), neither easy nor difficult (2) or difficult (3). These ratings were analysed so as to give each question an ADI. These ADIs can then be compared to make judgements as to the relative difficulty of different kinds of combinations of adjectives. Consider the following table in *Table 5.4:*

Kind of Question	Average ADI
All questions	1.65
Questions with 2 adjectives	1.39
Questions with 3 adjectives	1.70
Questions with more than 3 adjectives	2.09
Questions featuring *former*	1.94

Table 5.4: Average Difficulty Indices for Different Question Types

These data reflect the participant observations that longer strings of adjectives are more difficult to sequence, with 2-adjective bigrams having an average ADI of 1.39, while three-adjective strings are 1.70 and longer strings are more difficult at 2.09. Participant E057 was the only one to suggest that the word *former* was difficult to place, but this observation is reflected in the comparatively high ADI of 1.94 for phrases which included this adjective. Interestingly, the lowest ADI for a question which included *former* was 1.75, which was the second highest ADI for any question featuring just two adjectives. The only adjective bigram which was considered harder to order than *the most intelligent former tutor* was *the pleased satisfied detective*, which contained two adjectives with common derivation, morphology and semantic structure. This offers very strong evidence to the point made in 4.3 that *former* is problematic within a string. Cinque (2010: 30) considers the 'systematic ambiguity' of the adjective *former* and observes an 'apparent freedom of order' within PNPs featuring the adjective. This is reflected in the responses given to questions featuring *former*, as well as the high level of difficulty of selecting a normative order.

A number of participants made an observation which linked the difficulty of suggesting a natural order to how commonly the adjective occurs or how freely the adjective collocates with its head. 8%of participants note that less common words were difficult to order, with E091 suggesting that

short, simple words were easier to place. This is not an uncommon observation, and Quirk et al (1985: 1341) amongst others have made the observation that commonly-used adjectives tend to have a more fixed and rigid order than less simple, more technical adjectives such as *angular* in question 29. This adjective appeared in four out of five of the possible slots in the sequence of adjectives provided, with only pre-head position not inhabited, due to the compound *country house*.

E097 suggests 'demoralising biscuit' is an unnatural collocation in the phrase *the demoralising disintegrating broken biscuit*, and notes that this made selecting one preferred order more difficult. This once again relates to the notion of intersective and non-intersective adjectives, in which the properties of an adjective may or may not intersect directly with the entity expressed by the noun (Cinque 2010: 9; Feist 2012: 99, Cabredo and Hoffherr 2010: 7, McNally & Kennedy 2008: 3). In the case of question 37, the adjective *demoralising* is non-intersective as it describes the situation created by the disintegration of the biscuits, rather than directly modifying the biscuits themselves. The data here support the suggestion (Cinque 2010: 28 and others) that non-intersective adjectives tend to precede intersective adjectives, but also suggest that speakers find it difficult to identify non-intersective adjectives when mixed with intersective adjectives within a string.

It was interesting to find that, although only one question (22: *the little red dress*) yielded results in which 100% of participants identified just one order, only 10% of participants felt that more than 75% of questions had more than one potential order. On average, participants felt that just over half (55.6%) of the 37 noun phrases in the questionnaire had more than one potential order. This indicates that for nearly half of the questions, participants felt that the order they were giving was a fixed and invariable order, with no other orders possible. It appears that there is a strong distinction here between intuition and practice; that is, participants seem think that the choices they are making are based on more rigid rules than they actually are.

In question 39, I asked participants to consider 'what factors do you think affect your choice of order?' I wanted to investigate whether Greenberg and Srinivasan's (2003: 1) suggestion that 'it is not easy for a human to explain why he or she prefers one ordering or another' would be reflected in my participants' responses. This is, of course, an extremely open question and I selected it for inclusion in the questionnaire with the full knowledge that some participants would have difficulty providing an answer with any great depth of analysis. This was the case in a number of responses such as E036, who cited 'general knowledge on adjectives' and E058 who simply replied with 'sound right', as well as E110 who referred to 'adjectives and the order in which to put them, if any'.

Another option in this question was to give participants a checklist of potential factors they might feel affected them, but I felt this would be restricting the potential to get natural and non-coercive responses. Bowern (2008: 80, 90) warns against 'leading questions' of this kind, suggesting they 'can lead to apparent problems with elicited judgements', and are 'a type of priming (setting someone up to produce a certain answer). As Teodorescu (2006, among others) suggests, the phenomenon of adjective ordering is still not very well understood, and I felt an open question would allow for more potential discussion in this area. The responses (see appendices for the full list) can be generalised into factors affecting ordering, and these are shown in the table in *Table 5.5* below:

Factors	Number of comments	Participants (key in bold)
Instinct/ Logic	15	E010, E011, E016, E017, E031, E033, E036 (GK), E040, E058, E059, 061, E062, E064, E086 (guesswork), E089
Number of words	14	E005, E013, E016, E024, E029, E030, E034, E038, E041, E082, E088, E091, E092, E093
Semantics	9	E002, E020, E024, E027, E042 (size/colour easy), E057, E061 (colour never first), E088 (size usually first), E096
Phonology/ alliteration	6	E007, E008, E064, E086, E096, E151
Context	5	E004, E005, E034, E086, E097
Word Class/ Function	5	E008, E016, E057, E092 (place of NVAdj), E151
Collocation	5	E007, E008, E032, E038 (premod phrases), E089
Length	5	E024, E038 (& simplicity), E064, E091, E096
Commonness of word	4	E039, E070, E091, E093
Participles have an effect	3	E013, E027, E029
Pre-head slot most important	3	E056, E075, E088
Rhythm	2	E005, E032
Strength of word	2	E020, E089 (most direct first)
Methodology order	2	E027, E059
Some sentences did not make sense	1	E018
No right or wrong choice	1	E033

Table 5.5: Summary of Responses to 'What factors do you think affect your choice of order?'

As indicated above, the most common responses were that the number of words affected participants'decisions as to what the most natural order was (14), and that it was based on natural instinct or logic (15). Some participants made comments mentioning more than one factor, so the data reflect the raw number of comments in each area rather than a percentage of the whole. The effects of the number of words in a string have already been discussed above, while the idea that there is a natural instinctive order reflects Greenberg and Srinivisan's (2003) claim that speakers often recognise there is a particular order but that an explanation for this often proves difficult.

A number of speakers suggest particular 'rules' for adjectives of size and/or colour, while others referred to the word class or function of the adjective, reflecting Coates' (1977: 11) observation that word class is important in deriving preferred orders. Some comments such as that of E016, who made reference to 'types of adjectives', were ambiguous between these two factors. Collocation was also a recurring feature, with E007 and E008 referring to this feature by its linguistic name, and noting *country house* as being one ordering which was affected by this feature. One interesting observation in this area was made by three participants and involved the notion that 'as long as the word before the noun sounds correct, it makes the other modifiers easier to place' (E056). This perhaps suggests that Mod-III adjectives are the most constrained syntactically.

Context was also a common feature with several participants making some reference to the fact that the word order is variable depending on the situation. E004 observes that 'sometimes the order can change the meaning', while E097 considers 'how you interpret the sentence' as being important. The concept of word length affecting ordering (Quirk et al 1985, Bache 1978) was also mentioned by participants and a considerable number of participants considered phonology or prosodic features important. While the rhythm of intonation affects the stress and focus of a phrase (Warren 1984: 290), alliteration was cited by 6 participants as being a contributory factor in their decision on the most natural-sounding order. E007 cites *big brown* as being one ordering which was affected by this feature. While this might seem a simplistic observation, it is noted by enough different participants here to warrant further consideration. In phrases with variable non-distinctive orders, it may well be the case that phonological stress and alliteration may play a role in determining a preferred order.

5.4 Summary and Conclusions

The results gathered in this investigation allow a number of conclusions to be drawn:

Firstly, it is rare in English to find noun phrases which can be made ungrammatical by changing the order of adjectives within a string. Those few which are ungrammatical usually involve adjectives from more than one of Bache's (1978) zones of modification, in a sequence which contradicts that proposed by Bache. This is particularly the case with Mod-III adjectives which form a compound with the head noun, often being noun modifiers in collocations such as *rugby world cup* or fixed adjectival collocations such as *great white shark*; the noun phrases *the rugby world exciting cup* and *a great white particular shark* are simply ungrammatical.

This is not often the case however, and as Bache himself accepts, the order in English is rarely rigid. The example in Table 5.6 features one adjective from each of Bache's zones, with the top order being the normative, likely order. The other two orders seem a bit strange, but both can be rationalised in a given context. As *political* moves away from the head noun, it takes on greater 'descriptive force' (Warren 1984: 290), and denotes a sense of motive rather than referring to the area of politics. The Mod-I specifying adjective *first* specifies whatever comes after it (Dixon 1982), and hence restricts the head in different ways depending on where it is placed in the chain.

The	first	big	political	announcement
DET	MOD-I	MOD-II	MOD-III	HEAD
The	big	first	political	announcement
DET	MOD-II	MOD-III	MOD-I	HEAD
The	political	big	first	announcement
DET	MOD-III	MOD-I	MOD-II	HEAD

Table 5.6 Variable Order of Bache's (1978) Zones of Modification

The relative organisation of the three adjectives creates a variety of 'distinctive constructional grammatical meanings' (Feist 2012: 37), but none of these is ungrammatical or incoherent. The top order is strongly preferred, but the other two are equally viable in a specified context. Steixner (2013) suggests that focus can salvage almost any order but this is not to say that adjective ordering

in English is completely free or variable. In combinations such as the example in Figure 5.6, adjectives appear in distinctive sequences (Bache 1978) in which a variety of fixed conventions dictate how ordering controls conveyed meaning. These involve the notion that Mod-I adjectives do not always specify the head directly, but often provide a specification which relates to the adjective immediately following it in a string. *My favourite former teacher* contrasts with *my former favourite teacher* in that *former* only specifies the head explicitly in the first example, with the second ordering suggesting that the speaker now has a new favourite teacher. There would seem to be considerable scope for investigating the way in which Mod-I specifying adjectives move around within a string. The word '*former*' has been considered at some length in this chapter but a comparative analysis of the mobility and specificatory potential of Mod-I adjectives would be a valuable and interesting future study.

Another strong conclusion to be drawn from these results is that the number of adjectives in a string affects the way in which they are ordered. Ordering is more likely to be fixed or more strongly preferred in short, two-adjective sequences than it is in longer sequences of adjectives which are rare in natural language. Speakers find it particularly difficult to suggest normative orders for noun phrases which have long strings of adjectives and there are often a large number of orders which are permissible to a native speaker. These sequences often contain a variety of possible interpretations based on the manipulation of complex 'discernible secondary structures' (Muir 1972: 30), and are less easy to arrange in terms of their ordering than shorter, simpler strings.

Above all, ordering among adjectives is based first on context and the overall meaning of the phrase as a whole. When the order of adjectives changes the meaning of a phrase, the speaker selects the order which conveys his or her intended meaning. This might be to do with specifying or classifying the head in a particular order (Bache 1978) or could be to do with focus or stress within the string (Quirk et al 1985, Warren 1984), but these factors are generally more primary than the semantic content of the words. When there is no influence from context or classificatory function, adjectives tend to be organised according to the semantic area they represent. Subjective adjectives tend to precede objective, while the most distinctive ordering based on semantic sets is that size nearly always precedes colour. Bache's principles of emotional load and length (1978) seem to be paradigms which affect orders not controlled by other more salient elements, and generally have less effect on orderings than the more significant factors of function, context and semantics.

6. The Adjective Class in Northern Sotho

6.0 Introduction

In this chapter, I provide an analysis of the behaviour of poly-adjectival noun phrases (PNPs) in the Southern Bantu language Northern Sotho. I begin by giving some historical, social and linguistic background on the language in 6.1, before discussing the identification and members of the Northern Sotho adjective class in 6.2. In 6.3 I outline the morphosyntax of adjectival nouns, and in 6.4, the same is done for other more peripheral adjectival forms. In 6.5, I consider the nature of adjective strings and in 6.6, I provide a brief summary of the properties of Northern Sotho adjectives.

6.1 The Northern Sotho Language

Northern Sotho is a Southern Bantu language in Zone S32a (Guthrie 1971, Nurse & Philippson 2003: 3) which is one of the 11 official languages of South Africa. It is spoken by around 4 million people primarily in the Limpopo, Gauteng and Mpumalanga provinces in the North-East of the nation (2001 Census data, Omniglot, the African Languages Website [ALW]). There are also speakers in Zimbabwe and Botswana, and the language has a high degree of mutual intelligibility with its closest relatives, Tswana and Southern Sotho, which also have official status in South Africa. A detailed socio-historical context of the language is included in the appendices.

6.2 Problems of Classification

6.2.1 The 'Adjectives' of Northern Sotho

It is difficult to recognise an 'adjective class' in Northern Sotho which reflects the equivalent class in English. English has an open class with thousands of adjectives, while the concepts denoted by these adjectives are expressed using a variety of different structures in Northern Sotho. Some are expressed using nominal periphrastic constructions while others are communicated by verbs; some, however, are quite different from both of these classes and may be considered adjectives in their own right. While many theorists in the language consider the adjective a subclass of noun (Lombard 1985: 58, Ziervogel 1969, Van Wky 1967), others refer to adjectival constructions (Prinsloo et al 2013) and Poulos and Louwrens (1994) consider 'qualificatives' as a loose equivalent of the adjective class in English. An argument will be put forward in this section for the consideration of an independent word class 'adjective' in Northern Sotho, while the various structures which express adjectival concepts will be discussed at length, including adjectival strings.

Dixon (1982: 2-3) suggests that not all languages have an adjective class, noting that 'either they have no Adjective [sic] at all or there is a small non-productive minor class called Adjective'. Dixon

(*Ibid*: 3) goes on to suggest that 'In either of these cases it is interesting to ask how the language gets along without a full Adjective class. That is, how does it express concepts that are expressed through adjectives in languages, like English, which do have this major class'. Dixon (*Ibid*: 4) observes that all Bantu languages have a small minor class of adjectives and that 'about thirteen descriptive adjective roots [are] reconstructable for Proto-Bantu', with Venda, another Southern Bantu language of South Africa exemplified as having 20 adjectives.

Northern Sotho is generally said to have around 30-40 adjectival bases; that is, lexemes which represent the semantic content of an adjective, to which other morphemes are added. Lombard et al (1985: 58-9) suggest that 'there are a limited number of adjectival roots in Northern Sotho' and proceed to give 30 different examples. Ziervogel (1969: 58) suggests the existence of 'a number of stems which have their own type of concord', gives 26 examples and notes that this type of word is 'also termed adjective in Northern Sotho'. Kotze et al (1995: 28) do not give a particular number of adjectival roots, while Mphasha (2010: 63) suggests that they are 'few in number; in fact they constitute a closed class'. Mphasha suggests 33 adjectival roots, with *-borethe* 'ready' the only adjective which occurs in Lombard's list but is not in Mphasha's.

Both authors include the adjectives *-sotho* 'dark brown', *-šoro '*cruel' and *–šele '*strange', none of which appear in Ziervogel's list. Poulos and Louwrens (1994: 91-93) suggest a similar list, but also include *–tsothwa* 'in place of *sotho*' *-koto '*thick, fat' *-boleta* 'nice, smooth' and *-kgopo* 'crooked', the final two of which seem to function more as nominal relatives (see *6.4*). Mphasha (2010: 98) also includes these three morphemes in his list of adjective roots. While *-boleta, -borethe* and *-kgopo* all seem to function more commonly as relative nouns (see *6.4*) according to the *Pretoria Sepedi Corpus (PSC)* and the other sources consulted in this chapter, they are included in the exhaustive list of adjective roots in *Table 6.1* due to Ziervogel (1969), Poulos and Louwrens (1994) and Mphasha's (2010) claims.

The adjectives *–tona* 'right, male, big' and *–kaone* 'better' also appear in the *PSC*, functioning with the typical syntax and morphology of an adjectival noun, and are tagged as such. Interestingly, there is no morphological adjective which clearly corresponds to the English word *good* (this is expressed through a verb *lokile* or other similar adjectives like *–botse* or *–kgolo*), yet the compared form seems to exist in basic adjectival root form. *Kaone* usually functions as an adverb, but also appears in the *PSC* as an adjective five times and commonly functions in this way (Prinsloo 2013, p.c.). It appears as an adjective in numerous examples in De Schryver's (2013) dictionary. None of the major volumes on the language as mentioned in this chapter (Ziervogel 1969, Lombard 1985, Louwrens & Poulos

1994, Kotze et al 1995, Mphasha 2010, Prinsloo et al 2013) note that *-kaone* is one of the closed class of adjectives in Northern Sotho, yet its presence in the *PSC* functioning as an adjective is strong evidence that the list of adjectives needs appending:

60. *selo se sengwe se sekaone*

selo	*se*	*se-*	*ngwe*	*se*	*se-*	*kaone*
N7-thing	QP7	CM7	ADJ-other	QP7	CM7	ADJ-better

'another better thing' (*Pretoria Sepedi Corpus*)

61. *setšweletswa se sekaone*

setšweletswa	*se*	*se-*	*kaone*
N7-product	QP7	CM7	ADJ-better

'the better product' (De Schryver 2013: 213)

Another word which seems to function as an adjectival noun is *–tona*, which means alternately *male, right* (as in right hand) or *big,* depending on context (Prinsloo 2009: 167, Kotze 1991: 270). The nominal meaning of *tona* is 'headman' or 'general' and this has come to identify a lead animal in a group, or more broadly a large male animal, leading to an adjectival meaning associated with masculinity or large size. Interestingly, the word *tshadi* means both 'female' and 'left', (Prinsloo 2009: 169, Kotze 1991: 271), suggesting some parallel here. Both *–tona* and *–tshadi* seem to function as nominal relatives when describing gender, typically taking and retaining the prefix *di-*. Prinsloo et al (2013: 74) list both terms as adjectival roots, along with the locative suffixed form of *kaaka* 'how big?' and although they are not noted as an adjectival noun in any of the other volumes noted in this chapter, *-tona* often modifies a noun using the conventional adjectival morphology as discussed in *6.2.2*. This is evident in the following examples from the *PSC* in which it seems to convey only its transferred meanings of *right* and *big*:

62.

mello	*ye*	*me-*	*ntši*	*ye*	*me-*	*tona*
N4-fires	QP4	CM4	ADJ-many	QP4	CM4	ADJ-big

'many big fires '

63.

seatle-ng	*se*	*se-*	*tona*
N7-hand- LOC	QP7	CM7	ADJ-right

'in the right hand'

64. *letsogo-ng* *le* *le-* *tona*
N6-arm- LOC QP7 CM7 ADJ-right
'on the right arm'

De Schryver (2013: 446) also lists *–pinki* 'pink' as a modifier which can take the concordial morpheme, and although this is clearly a borrowing, native speakers are aware of its existence as an adjective and it is reasonable to include it in this chapter. Poulos and Louwrens (1994: 91-5) also include the colour terms *–tilo* 'black and white' and *–khunou* 'reddish-brown' which are said to be restricted to the modification of animals (dogs and cattle respectively). This suggests that there are up to 42 adjectives in Northern Sotho, and provides some evidence to suggest the adjective class is perhaps not as closed and unproductive as often suggested by authors such as Dixon (1982: 4) and Faass (2010: 45). If a common adverb such as *kaone* can be used with adjectival morphology and syntax, perhaps this kind of functional shift is becoming more permissible in Northern Sotho.

Based on the work of Ziervogel (1969), Lombard (1985), Poulos and Louwrens (1994), Kotze et al (1995), Faass (2010) and Mphasha (2010) and with *-kaone* also showing evidence in the *PSC* of being adjectival nouns, the following fairly exhaustive table of adjectives for Northern Sotho can be drawn up in *Table 6.1*. All examples are from the *PSC*, or Lombard (1985: 58-9) and Poulos and Louwrens (1994: 91-5), and adjectives in brackets are allomorphs.

Adjectival Root	English	Example NP	English
-tee	One	*Setshaba se setee*	One tribe
-pedi	Two	*Dihlopa tše pedi*	Two groups
-raro	Three	*Batho ba bararo*	Three people
-ne	Four	*Dieta tše dine*	Four shoes
-hlano	Five	*Basadi ba bahlano*	Five ladies
-hubedu (-hwibidu)	Red	*Maoto a mahubedu*	Red legs
-sehla	Yellow/grey	*Borokgo bjo bosehla*	Yellow trousers
-so (-ntsho)	Black	*Lerotse le leso*	A black pumpkin
-šweu	White	*Mahlo a mašweu*	White eyes
-tàlá	Blue/green	*Kuane ye tàlá*	The blue hat
-sotho (-tshothwa)	Brown	*Mahlo a matsothwa*	Brown eyes
-pinki	Pink	*Letšoba le lepinki**	A pink flower
-khunou	Reddish-brown	*Dikgomo tše dikhunou*	Reddish-brown cows
-tilo	Black and white	*Mpša ye tilo*	Black and white dog

-be (-mpe)	Ugly, bad	*Nnete se sebe*	An ugly truth
-golo	Big	*Lentšu le legolo*	Big words
-telele	Tall, long	*Molete wo motelele*	A tall (deep) pit
-sese	Thin	*Monna yo mosese*	A thin man
-koto	Thick, fat	*Diboko tše dikoto*	Fat worms
-tàlá	Old	*Selepe se setàlá*	An old axe
-bjang	What kind	*Monna yo mobjang*	What kind of man?
-fsa (-mpsha,-swa)	New, young	*Makgarebe a mafsa*	Young virgins
-kae	How many	*Dinku tše kae*	How many sheep?
-kaka (-kaaka)	So much	*Tshelete ye kaka*	So much money
-kaakang	How big	*Dikgomo tše kaakang*	Cows how big?
-kopana	Short	*Polelo ye kopana*	A short report
-ngwe	Other	*Bothata bjo bongwe*	Another difficulty
-ntshi (-ntši)	Many	*Barutiši ba bantshi*	Many teachers
-nyane	Small	*Phapošaneng ye nnyane*	In a small room
-thata	Hard, difficult	*Leeto le lethata*	A hard journey
-botse	Beautiful, good	*Seema se sebotse*	A beautiful proverb
-bose	Tasty, sweet	*Bogobe bjo bobose*	Tasty porridge
-šoro	Cruel	*Mehlolo e mešoro*	Cruel mysteries
-šele	Strange, foreign	*Mpša ye šele*	A strange dog
-bjale	Such	*Lengwalo le lebjale*	Such a letter
-fe	Which	*Ke sejo sefe?**	Which food?
-borethe	Ready, slippery	*Leleme le leborethe*	A slippery tongue
-boleta	Nice	*Dintshi tše boleta*	Many nice things
-kgopo	Crippled, lame	*Dinku tše kgopo*	Lame sheep
-kaone	Better	*Mokgwa wo mokaone*	A better habit
-tona	Male, right, big	*Mello ye metona*	Big fires
-tshadi	Female	*Tau ye tshadi**	A female lion

*(De Schryver 2013)

Table 6.1: The Adjective Roots of Northern Sotho

A major distinction between Dixon's (1982: 4) discussion of Venda adjectives and those of Northern Sotho is that Dixon (*Ibid*: 3) does not count what he refers to as ''limiting adjectives' - numbers, 'some', 'this', 'other', 'how many' and the like'. Although Dixon bases his criteria for recognising

words as adjectives on morphosyntactic principles, his decision to omit these 'limiting adjectives' from his study is based purely on semantic principles. As Northern Sotho has traditionally been described (since Van Wyk 1967) in terms of the morphological and syntactic behaviour of its word classes, rather than on semantic grounds, words such as *–ngwe* (another), *-ntshi* (many), *-kae?* (how many?) and *–raro* (three) are all commonly identified as adjectives in Northern Sotho. Interestingly the numbers above five function somewhat differently, as is discussed in *6.4.*

6.3 The Morphological Behaviour of Adjectival Nouns

The morpho-syntactic behaviour of words which could be considered members of an 'adjective class' in Northern Sotho is very varied. As well as the basic 30-42 adjectival nouns, there are relative qualificative nouns, nominal relatives, descriptive possessives and verbal relatives (see *6.4*). In this section, I outline the particular characteristics of central adjectives, or what Lombard et al (1985: 57) term 'adjectival nouns', before discussing the various ways in which words which are adjectives in English are expressed in Northern Sotho in *6.4*.

Adjectives in Northern Sotho are typically postnominal and are separated from the head noun by a small monomorphemic word which varies according to the noun class of the modified head. Lombard et al (1985: 57) and Kotze et al (1995: 28) call these words 'qualificative particles', while Ziervogel (1969: 58) calls them 'demonstratives'. Faass (2010: 46) refers to them as 'demonstrative concord' and Mphasha (2010: 90) calls them 'determiners' but notes only that they have 'the same morphological structure as the demonstrative'. Louwrens (1994: 159) defines the qualificative particle as 'a term used by some grammarians to refer to the concordial element which often resembles the demonstrative in qualificatives', while Lombard (1985: 171) also notes that these particles 'look like demonstratives'.

Referring to the qualificative particle as a determiner or demonstrative seems problematic as its function is simply that of linking an adjective to a noun by way of concord, rather than any particular deictic function. It specifies neither definiteness nor proximal or distal deixis so the term *qualificative particle* will be used throughout this investigation. Ziervogel (1969) and Poulos and Louwrens (1994) consider the adjective and the qualificative particle to be different word classes, while Kotze et al (1995: 28) refer to the whole structure of QP+ADJ as 'adjectival noun'. For simplicity, I will refer to the qualificative particle and adjective as separate entities, while the construction as a whole (i.e. the qualificative particle, the concordical morpheme and the adjective root) will be referred to as an adjectival noun.

While the word *motho* 'person' is inherently in noun class 1 due to its *mo-* prefix and its human, singular reference, its plural form is considered as belonging to noun class 2 due to its *ba-* prefix and human, plural reference (Lombard 1985, Ziervogel 1969, Nokaneng 1976). Similarly, other nouns inhabit other noun classes based primarily on their morphology, but also display particular common semantic properties (Van Wyk 1968: 251, Bleek 1869: 158). For example, nouns in class 3 often have an *m-* or *mo-* prefix and denote non-human entities such as *motse* 'village'. These nouns tend to have a close link to humans (*molala-* neck, *monwana-* finger) and are often animate (*mmutla-* hare, *moswe-* meercat) or semi-animate (*morara*-vine, *moriti*-shadow, *mollô-* fire) (examples from Lombard 1985: 30-38). Adjectives however, have no inherent noun class, and inherit this characteristic from the head which they modify. These characteristics make Northern Sotho adjectives considerably different from their English equivalents.

Even when adjectival nouns appear as head of a nominal phrase, they adopt the qualificative particle and prefix of the noun class of whichever noun they are referring to, providing a strong suggestion of an elided head. The phrases *yo mogolo* and *ba bagolo* are translated as *the big person/people* rather than *the big things* because the presence of concordial markers of noun classes 1 and 2 suggests that the elided head is from these word classes and is hence a human entity. When used without a qualificative particle, adjectives often take on a more restricted and more inherently 'nominal' meaning, such as *mogolo*, which is used to refer to an 'elder' or an older brother or sister (Prinsloo 2009: 99) or *bagolo* which is often used to refer to one's parents (Prinsloo 2009: 6).

There is considerable suggestion within the literature on Northern Sotho adjectives that adjectival nouns can precede the head noun being modified, as well as usually appearing postnominally. Mphasha (2010: 125) suggests that *monna yo mošoro* 'a cruel man' can equally be *yo mošoro monna*, with no change in meaning or focus suggested by the author. Prinsloo et al (2013: 75) also make this observation but note that 'adjectival constructions usually occur *to the right of* [sic] their antecedents. They may, however, also be placed *to the left of* their antecedents in order to stress contrast'. Such a construction was not recognised by any of my participants and may be dialectical.

Poulos and Louwrens (1994: 114) suggest that this syntactic inversion is possible but that it is for the purpose of reinforcing the identity of the elided head of a nominalised adjective. The authors suggest that 'should the speaker use a qualificative [as head of a noun phrase] and at the same time feel that the hearer may not easily recall the antecedent, then the speaker can quite comfortably use the antecedent *after* the qualificative'. This is to say that if one used the term '*tše kgolo*' 'the big

ones' when referring to the bigger animals in a herd of goats, then the speaker might legitimately say '*tše kgolo dipudi*' if the hearer seemed unsure of the identity of the elided head.

When modifying a noun, adjectives such as *kgolo* (big) are comprised of an adjectival root which contains the lexical meaning of the adjective, as well as a monomorphemic prefix, often known as the concordial morpheme (Louwrens 1994: 31) which also agrees with the modified head:

65.	*noka*	*yê*	*k-*	*golo*
	river-N9	QP-N9	CM-N9	bigADJ
		'a big river'		

In this example from Louwrens (1994: 31), the head noun *noka* 'river' is postmodified by the adjectival noun *yê kgolo* 'big'. As *noka* is in noun class 9, which is commonly associated with (amongst other things) natural phenomena such as *thaba* 'mountain', the qualificative particle *yê* and the concordial morpheme *k-* both express agreement with the noun class of the head. Similarly, the following two examples, *motho yô mogolo* and *batho ba bagolo,* indicate concord with noun classes 1 and 2:

66.	*motho*	*yô*	*mo-*	*golo*
	person-N1	QP-N1	CM-N1	bigADJ
		'a big person'		

67.	*batho*	*ba*	*ba-*	*golo*
	people-N2	QP-N2	CM-N2	bigADJ
		'big people'		

The following table in *Table 6.2* (adapted from examples in Lombard 1985 and the *PSC*) indicates the range of concordial possibilities for various adjectives modifying nouns from different noun classes:

NC	Head	QP	CM	Adjective	English
1	*monna*	*yô*	*mo-*	*sese*	The thin man
2	*batho*	*ba*	*ba-*	*golo*	The big people
3	*moya*	*wô*	*mo-*	*be*	The evil spirit
4	*mengwaga*	*yê*	*me-*	*raro*	Three years
5	*lengwalo*	*lê*	*le-*	*bjalê*	Such a letter
6	*mantšu*	*a*	*ma-*	*ntši*	Many words
7	*seapara*	*sê*	*se-*	*šweu*	The white dress

8	*dietša* *dietša* *dietša* *dimpša*	*tše* *tše* *tše* *tše*	*k-* *di-* *n-* -	*golo* *nê* *nnyanê* *pedi*	Big lights Four shoes Small shoes Two dogs
9	*tšhelete* *hempe* *phapošaneng*	*yê* *yê* *yê*	- *k-* *n-*	*kaka* *hubedu* *ngwe*	So much money The red shirt In another room
10	*dinku*	*tše*	-	*kae*	How many sheep?
14	*borokgo*	*bjô*	*bo-*	*sehla*	Yellow trousers

Table 6.2 Morphosyntax of Adjectival Nouns

As illustrated above, there is considerable morphological variation in the behaviour of adjectives when modifying nouns from different noun classes. There is a lot of similarity between the modification patterns of nouns in N8, N9 and N10; adjectives modifying heads in N8 and N10 have identical morphological properties, while N9 nouns take a different qualificative particle and generally have a zero concordial morpheme, although adjectives beginning with a velar or nasal tend to take a *k-* or an *n-* prefix respectively. Adjectival nouns are the only nouns which take the concordial morpheme, suggesting they are not inherent to any noun class, but agree with the noun class of the head they are modifying. Each other noun is inherent to a particular noun class; even relative nouns, which also modify nouns after a qualificative particle inhabit a consistent noun class (usually N14) which does not change in concord with the head (see *6.4*). This concord is similar to the behaviour of adjectives in Latin, which look like nouns morphologically but, unlike nouns, change their inflection to agree with the declension, gender case and number of the head noun. Consider the following examples of the word *big* from Latin (*magn-*) and Northern Sotho (*-golo*):

Latin: 68. *puella* *magna* -

N-girl-1D.NOM.SG ADJ-big-1D.NOM.SG

‘the big girl’

69. *servum* *magnum*

N-slave-2D.ACC.SG ADJ-big-2D.ACC.SG

‘the big slave’

70. *servis* *magnorum*
N-slave-2D.GEN.PL ADJ-big-2D.GEN.PL
'of the big slaves'

(examples based on Griffin 2011: 13)

Northern Sotho: 71. *motho* *yô* *mo-golo*
N1-person QP1 CM1-ADJ-big
'the big person'

72. *banna* *ba* *ba-golo*
N2-men QP2 CM2-ADJ-big
'the big men'

73. *selepe* *sê* *se-golo*
N7-axe QP7 CM7-ADJ-big
'the big axe'

In both languages, the adjective consists of a lexical root morpheme with inflectional morphemes added according to the nominal properties of the modified head. In Latin there is an inflectional suffix which indicates the case, number and declension/gender of the modified noun, while in Northern Sotho, the noun class of the head is indicated on the adjective in the form of a variable qualificative particle and concordial morpheme. Although the two languages behave in a similar fashion with regard to nominal modification, adjectives are considered an independent word class in Latin, but in Northern Sotho they are generally not.

Lombard (1985: 29) suggests that in Northern Sotho, 'nouns are distinguished as a category from other word categories on the grounds of certain essential morphological characteristics', these being the combination of a noun class prefix and a lexical stem. He goes on to say that adjectival nouns are distinguished 'on the grounds of a morphological difference […] the fact that class prefix changes in accordance with the class of the noun which is being qualified'. These grounds are identical to those grounds on which adjectives are considered an independent word class in Latin and many other languages which have what Dixon (2004: 15) terms 'noun-like adjectives'. Dixon suggests that languages such as Latin and Swahili (another Bantu language) have a distinct word class 'Adjective' based on these exact criteria that Lombard observes as being characteristic of Northern Sotho adjectives.

Dixon (*Ibid*) also notes that other morphological and semantic distinctions between adjectives and nouns can mark out adjectives as a distinct word class. These include comparison, intensification and other morphological processes such as reduplication. Mphasha (2010: 112-123) notes that adjectives in Northern Sotho exhibit a variety of properties which are distinct to those of nouns. The suffixes *-ana, -nyana* and *-gadi* all provide modification of adjectives, with the first two used also used commonly with basic nouns. Both *-ana* and *-nyana* convey diminution, with the latter being a more intense form of diminution. This is the case in both basic and adjectival nouns:

74.	*Moya*	'wind'	*(Mo)tala*	'green
	Moyana	'small wind'	*Motalana*	'greenish'
	Moyanyana	'very small wind'	*Motalanyana*	'very slightly green'

Examples from Lombard (1985: 76) and Mphasha (2010: 113)

In its usage with colour adjectives, however, *-ana* can also have the function of suggesting femininity. Mphasha (2010: 114) notes that this is only the case when describing animals, with *kgomo yê swana* indicating not only that a cow is white, but that it is female and white, rather than a diminutive form. According to Lombard (1985: 83), the augmentative/feminine suffix *–gadi* commonly has a similar function of expressing femininity when used with basic nouns. *Mohlalwa* refers to a divorcee, but specifies a female divorcee when combined with the suffix to make *mohlalagadi.* The suffix can also occasionally have an augmentative effect, with Lombard (*Ibid*) suggesting that 'certain speakers of Northern Sotho' have *kgomogadi* 'big cow', *tlôugadi* 'lead elephant'. This would, however, appear to be quite rare and Ziervogel (1969: 90) only notes this suffix as expressing femininity on nouns.

The use of *–gadi* as an intensifier may be restricted to a small number of words used by a small number of speakers in basic nouns, but according to Mphasha (2010: 114), it is commonly used in this way with adjectival nouns. He makes reference to the same example as Lombard in considering a lead elephant, but translates it in his volume as *tlôu yê kgologadi.* This would suggest that the rare examples of augmentative usage with basic nouns to which Lombard refers might be contractions of longer noun phrases featuring adjectival nouns, with *kgomogadi* equally likely to be a contraction of *kgomo yê kgologadi*.

The other common way in which adjectives are intensified in Northern Sotho is through the process of reduplication, which Katamba (1993: 180) describes as 'a process whereby an affix is realised by phonological material borrowed from the base'. Sapir (1921: 76) notes that the repetition of all or

part of the root of a word is often used to indicate 'added intensity', amongst other concepts such as plurality and repetition. Reduplication in Northern Sotho is common, but does not always lead to a clear-cut case of intensification. Ziervogel (1969: 26) notes that 'a reduplicated noun in the singular indicates importance, while the plural indicates "different kinds of"'. Therefore the following examples can be illustrated:

75. *Sejosejo-* important food (singular reduplication)

76. *Dijodijo-* Different foods

In verbs, reduplication indicates something of a diminutive, with Ziervogel (1969: 31) suggesting an indication that 'it is carried out "a little" or "somewhat"', while Lombard (1985: 35) suggests that verbal reduplication suggests an action takes place 'repeatedly or at intervals'. Both of these distinctions suggest that reduplication has different effects on verbs and nouns to what it does on adjectives. Mphasha (2010: 115) suggests that 'many adjectives can be reduplicated twice, thrice or even more, depending on the emphasis'. Consider the following examples given by Mphasha, which I have selected to provide a representative example of the variety in form:

77. *Ngwanenyana yo mo-botse-botse*
N1-girl QP1 CM1-RDP-ADJbeautiful
'the very beautiful girl' (reduplication of root but not concord)

78. *Sefatanaga se se- fsa- se- fsa*
N7-car QP7 CM7-ADJnew-CM7-ADJnew
'A very new car' (reduplication of both root and concord)

79. *Monno yo mo-šoro-šoro-šoro*
N1-man QP1 CM1-RDP-RDP-ADJcruel
'An extremely cruel man' (retriplication of root)

80. *Tšipi ye thata-thata-thata-thata*
N9-iron QP9 CMØ-RDP-RDP-RDP-ADJhard
'Extremely hard iron' (root x 4)

Mphasha (*Ibid*) suggests that not all adjectives can be reduplicated, with numerals and *–ngwe* (other) incapable of this process. It is also apparent that reduplicated adjectives do not always convey an intensified version of their original meaning. The reduplicated form of *–golo* (big) has a

somewhat more specified meaning, with *–gologolo* suggesting someone who is aged or 'high in rank', rather than simply 'very big' (*africanlanguages.com/sdp)*.

Dixon (2006: 25) suggests that 'reduplication is [a] grammatical process which may have different semantic effects with nouns and adjectives', noting that in some languages in which adjectives share many properties with nouns, reduplication often has the same semantic effect on both adjectival nouns and basic nouns. In Dyirbal, for example, *jambunjambun* (basic noun: *grubs*) and *bulganbulgan* (adjectival noun: *many big things*) both exhibit reduplication which suggests plurality. Dixon (*ibid*) suggests that when there is a semantic distinction in the effects of reduplication between adjectival nouns and basic nouns, this is evidence for the existence of distinctive word classes.

A final element of the morphology of adjectival nouns in Northern Sotho is that they can form adverbs through the addition of the adverbial prefix *–ga* (Lombard 1985: 167). Lombard notes that adverbs can be formed from nouns, but every noun he exemplifies is an adjectival noun. Just as in English, central adjectives can generally form adverbs when the suffix *–ly* is added, adjectival nouns in Northern Sotho (e.g. *–mpe '*bad') can become adverbs when the prefix *ga-* is added (*gampe-* badly). This is a feature which seems to be restricted to adjectival nouns; Ziervogel (1969: 28-9) notes that adverbs formed from nouns either take no prefix (generally class 6 nouns such as *maabane*) or take the instrumental particle *ka* (*ka selepe-* with an axe).

Louwrens (1994: 159) observes that adjectival nouns 'differ radically from ordinary nouns' and notes that their classification as nouns is 'highly debatable'. When one considers that adjectival nouns do not inhabit a particular noun class and generally appear in conjunction with qualificative particles and a concordial morpheme, it is clear that they exhibit considerably different morphosyntactic properties to basic nouns. There is a clear semantic distinction between the way in which basic and adjectival nouns undergo reduplicative procedures, and there are different effects when each root appears with the *–gadi* suffix. As the language meets many of Dixon's (2004) criteria by which to differentiate between nouns and adjectives, there is considerable scope for the proposal that Northern Sotho adjectives should be analysed as a distinct word class, and not a subclass of nouns.

6.4 Relative and Enumerative Nouns and Periphrastic Constructions

Numerals vary in terms of their morphological behaviour, with the numbers two to five being adjectival nouns, six and above usually functioning like relative nouns (this is discussed more later), and *-tee* 'one' being variably defined as an adjectival noun or an enumerative. Ziervogel (1969: 56) and Kotze et al (1995: 28) note that there are four 'enumerative roots' in Northern Sotho, which function similarly to adjectival nouns, often taking concordial morphemes, but are preceded by a particle identical to the subject concord rather than the qualificative particle. Prinsloo et al (2013: 78) suggest that the term 'enumerative' is 'misleading as it creates the impression that these words refer to numbers', while *–tee* is the only numeral which functions in this way. The authors adopt the term 'pseudo-adjectival constructions' rather than enumeratives, while Van Schaik (1976: 14) calls them 'false adjectives'. Louwrens (1994: 62) notes that the term 'radical pronouns' is often preferred. This term, however, seems no more appropriate than 'enumerative' as these roots are not pronouns.

The other roots which function in this way are – šele 'strange/foreign', *-šoro* 'vicious/ cruel' and *–fe* 'which'. Lombard (1985: 57) classifies *–tee, -šele* and *–šoro* as adjectival nouns and gives examples of them working with adjectival morphology, while *–fe* exhibits quite different morphology to the other three, as it is generally written as one word with the 'enumerative particle' as a prefix. This tends to make it look a lot like an adjectival noun without a qualificative particle, and marks it out as a singular case in terms of its morphological behaviour. Like some adjectival nouns, it expresses an interrogative and sounds most appropriate to native speakers when the head is preceded by the interrogative particle *ke* (see fieldwork data). Consider the following examples:

81.	Adjectival noun:	*monna yo mošoro-*	a cruel man (Lombard 1985: 58)
82.	Enumerative:	*dinonyana di šoro-*	vicious birds (Ziervogel 1969: 56)
83.	*-fe:*	*ke dikgopolo dife-*	which ideas (De Schryver et al 2013: 34)

Creissels (2010: 1) suggests that adjectives can be distinguished from nouns in Southern Bantu languages based on the above argument which notes that adjectival nouns have no inherent prefix, rather taking a concordial morpheme which agrees with the noun it modifies. He also considers 'relative nouns', suggesting that 'Southern Bantu languages also have a class of words that do not meet this morphological characterization, although their syntactic behaviour and semantic properties suggest identifying them as adjectives too'.

Lombard (1985: 57) notes the existence of 'two types of qualificative nouns' which form a sub-class of nouns in Northern Sotho and, like adjectives in English, usually function as a modifier to a head noun. The first of these qualificative nouns is the adjectival noun, as discussed in the previous section, while the second is known as the 'relative noun' or 'nominal relative'. The major similarity between these two types of qualificative noun is that they both typically function as a postnominal modifier and follow a qualificative particle; the major distinction between the two is that, while adjectival nouns take a concordial morpheme as a prefix which establishes agreement with the head, 'the relative nominal root does not readily change class prefix in accordance with the class of the noun which is being qualified' (Lombard 1985: 59). Consider the following examples:

84.	*Monna*	*yo*	*mo-*	*golo*
	N1-man	QP1	CM1	ADJ-big
		'big man'		
85.	*Banna*	*ba*	*ba-*	*golo*
	N2-men	QP2	CM2	ADJ-big
		'big men'		

86.	*Monna*	*yo*	*bohlale*
	N1-Man	QP1	RELN-clever
		'clever man'	
87.	*Banna*	*ba*	*bohlale*
	N2-Men	QP2	RELN-clever
		'clever men'	

In these examples, *-golo* (big) and *-bohlale* (clever) are both central adjectives in English, but they function slightly differently in Northern Sotho. The former, *-golo*, is an adjectival noun and adopts a concordial morpheme in accordance with the noun class of the modified head, while the latter, *bohlale*, is a relative noun and hence retains its class prefix irrespective of the noun class of the noun it qualifies. Lombard notes that for modification through relative nouns, 'the *concordial morpheme* is vested in the qualificative particle only', and Louwrens (1994: 99) suggests that relative nouns are 'nouns which mainly belong to class 6 and class 14 and which are preceded by the so-called *qualificative particle* when used as qualificatives'. Ziervogel (1969: 56-8) groups nominal, verbal and enumerative relatives together noting that 'because each one is constructed in a different way, each is given a different name within the blanket term "relative", although they all have the same

function in the language, viz. to qualify a noun or pronoun'. He suggests that the qualificative particles used with relative nouns are identical to those used with adjectives and suggests that the distinction between the two is made by the lack of the concordial morpheme.

Lombard (1985: 60) notes that relative nouns operate more readily as nominal heads than adjectival nouns, and have rather different meanings when preceded by the qualificative in this function. When *bohlale* functions as a head noun, it means 'wisdom', while it means 'clever' when functioning as a modifier. If preceded by the qualificative particle *yo* when functioning as a nominal head, the nominalised meaning is *the clever one*, created by the qualificative concord with noun class 1, which typically indicates a singular, human entity. This bears a strong suggestion once again of an elided head, much like nominalised adjectives such as *the poor* in English (see *Chapter 4*).

The fact that *bohlale* has a different meaning when preceded as a nominal head by the qualificative particle provides a strong argument for the recognition of an independent adjective class in Northern Sotho. When certain nouns are preceded by the qualificative particle, they become adjectivalised and undergo a semantic shift from a concept indicating an idea or a solid concept, to a property or characteristic. The morphological characteristics of relative nouns in Northern Sotho is similar to that of derived adjectives in English, with English adjectives taking a suffix and exhibiting the same semantic change as relative nouns when preceded by the qualificative particle. Consider the following examples:

88. *mafolofolo* – energy (noun)

89. *ba mafolofolo* – the energetic (energetic people)

90. *kgabo ye mafolofolo* – an energetic monkey

91. *bogale* – sharpness (noun)

92. *tše bogale* – sharp things

93. *dino tše bogale* – strong drinks

In these examples, the original meaning of the basic nouns *mafolofolo* and *bogale* are somewhat different from their transferred meanings as relative nouns. The former also conveys the notion of being diligent or hard-working, while the second can mean *brave, sharp* or *strong* (Prinsloo et al 2009). I suggest that any word which can follow the qualificative particle and modify a noun

independently with or without the addition of further particles should be considered an adjective in Northern Sotho.

There is a large number of relative nouns in Northern Sotho, considerably more than there are adjectival nouns. Between Ziervogel (1969), Mphasha (2010), Lombard (1985) and Kotze et al (1995), around thirty relative nouns are listed, but in the data extracted from the *PSC*, there were considerably more. Relative nouns commonly used in Northern Sotho include the following:

94. *mmutla* *wo* *bohlale*
N3-rabbit QP3 RELN-clever
'the clever rabbit'

95. *ditaba* *tše* *bohlokwa*
N10-things QP10 RELN-rare
'rare (important) matters'

96. *tsebe* *se* *motho*
N7-ear QP7 RELN-human
'a human ear'

97. *leswika* *le* *boima*
N5-stone QP5 RELN-heavy
'a heavy stone'

98. *marotho* *a* *boleta*
M6-loaves QP6 RELN-soft
'soft loaves'

99. *monna* *yo* *mafolofolo*
N1-man QP1 RELN-energetic
'energetic man'

100. *ditshabeng* *a* *maatla*
N6-tribe-LOC QP6 RELN-strong
'in strong tribes'

101. *bogobe* *bjo* *monate*
N14-porridge QP14 RELN-tasty
'tasty porridge'

102. *pudi* *tše* *boya*
N8-goats QP8 RELN-wool
'wooly goats'

103. *phoofolo* *ye* *kotsi*
N9-animal QP9 RELN-dangerous
'dangerous animal'

104. *meeta* *ye* *seswai*
N9-clay pot QP9 RELN-eight
'eight clay pots'

Each of these relative nouns has a strong nominal meaning, in the same way that *bohlale* means *wisdom* when used as a nominal head (*motho* 'person'; *maatla* 'power'; *kotsi* 'danger- Prinsloo 2009). When used with qualificative particles, they come to represent the intrinsic quality associated with their nominal meaning. Some adjectival nouns can also function as relative nouns, with *nama ye bose* (relative) and *nama ye mebose* (adjectival) both suggesting the notion of 'tasty meat' (Mphasha 2010: 66).

Not all nouns can follow a qualificative particle however, so some more specified relationship between the nouns must be indicated. Basic nouns can modify a head when preceded by various particles indicating particular relationships between the two nouns, just as prepositions do in English. The major distinction between these constructions and those involving qualificative nouns is that only relative and adjectival nouns follow the qualificative particle (Ziervogel 1969: 56), while possessive concords are often used to create nominal paraphrases of English denominal adjectives (examples adapted from De Schryver 2013):

105. *kantoro* *ya* *selete*
N9-office PC9 N5-region
'regional office'

106. *mokgatlo* *wo* *mo-fsa* *wa* *dipolitiki*
N3-party QP3 CM3-ADJ-new PC3 N10-politics
‘ a new political party’

107. *moka* *tša* *Afrika*
N10-country PC10 N10-Africa
‘African countries’

Louwrens (1994: 56) and Mphasha (2010: 133) refer to such nominal periphrases as ‘the descriptive possessive’, but the latter observes that title ‘is a misleading term because […] there is no [semantic] possessive in such a noun phrase but only the presence of a possessive [particle]’. Louwrens (1994: 56) notes that ‘the distinction between direct and descriptive possessives is based on meaning, and not on their structural characteristics. Mphasha (2010: 133) notes that ‘the semantic adjective may also appear in various categories such as NP locative and complementizer phrase’.

Some descriptive possessives in Northern Sotho are the equivalent of English central adjectives, with nominal periphrases very commonly used to indicate properties of a noun:

108. *ngwana* *wa* *boitekanelo*
N1-child PC1 N14-health
‘healthy child’

109. *mosadi* *wa* *nthathana*
N1-woman PC1 N7-small piece
‘thin woman’

Other English adjectives are often formed through verbal participles which take the qualificative particle followed by the subject concord; Kotze et al (1995: 35) call this the ‘relative concord’. Relatively little is written about these forms, although Ziervogel (1969: 68) notes that ‘the [verbal] relative form is basically a participial form’. These participial forms end in the suffix *–ego/-ago* and are often the equivalents of English participial adjectives or may simply translate as central adjectives in English. Kotze et al (1995: 29) note that the numerals six and seven may also be expressed using verbal relatives. Consider the following examples (adapted from De Schryver 2013 unless otherwise stated):

110. *dimpsha tše tharo tše di lwal-ago*
N10-dogs QP10 RELNthree QP10 SC10 VB-be.sick-PROG
'three sick dogs'

111. *nonwane ye a kgahliš-ago*
N9-story QP9 SC9 VB-be.interesting-PROG
'interesting story'

112. *monna yo a sepal-ago*
N1-man QP1 SC1 VB-travel-PROG
'travelling man' (Ziervogel 1969: 68)

113. *maotwana a a šupago*
N4-wheels QP4 SC4 VB-seven-PROG
'seven wheels' (Kotze et al 1995: 29)

Descriptive possessors and verbal relatives are not usually considered members of a prospective 'adjective class' in Northern Sotho. However, if we consider that adjectives in English are characterised by a variety of different syntactic and morphological properties (Quirk et al 1985: 404, see Chapter 4), we can do the same for what Prinsloo et al (2013: 73) term 'adjectival constructions' as well as the other various forms which express property concepts in Northern Sotho. Consider the following table:

Lexical type	Adjectival Noun	Relative Noun	Enumerative Noun	Verbal Relative	Descriptive Possessive
Example	*-golo*	*bonate*	*- šele*	*befetswego*	*boitekanelo*
English translation	'big'	'tasty'	'strange'	'angry'	'healthy'
Functions as modifier	YES	YES	YES	YES	YES
Follows qualificative particle	YES	YES	NO	YES	NO
Immediately follows particle	YES	YES	YES	NO	NO
Takes concordial morpheme	YES	NO	YES	NO	NO
Can function as NP head when preceded by QP	YES	YES	YES	YES	NO
Can function as NP head without QP	NO	YES	NO	NO	YES
Changes meaning with QP as NP head	NO	YES	NO	NO	NO

Table 6.3: Properties of Adjectival Constructions in Northern Sotho

It is clear from the table above that, as in English, there are various criteria by which to establish whether a word can be considered an adjective in Northern Sotho. An adjectival noun can be compared to a central adjective in English as it exhibits all of the prototypical properties which can be attributed to adjective-type constructions:

- Semantically:
    - they represent a property concept or provide some kind of specification or identification of a head noun.
- Functionally:
    - they work as modifiers
    - they can be head of a noun phrase when preceded by the qualificative particle
    - they cannot be head of a noun phrase without the qualificative particle
- Syntactically:
    - they follow the qualificative particle
    - there is nothing between them and the qualificative particle

- Morphologically:
    - they take a concordial morpheme according to the noun class of the head

All the other forms annotated in *Table 6.3* can be considered the equivalent of peripheral adjectives in English; they exhibit some, but not all of the core qualities of a morphological adjective (Mphasha 2010) and are hence less 'adjectival' than adjectival nouns. Just as participles in English may be considered as inhabiting a 'fuzzy borderline area between the two categories [verb and adjective]' (Huddleston 1988: 114), this is certainly the case with verbal relatives in Northern Sotho. Descriptive possessives are the least adjectival concepts in this table as they do not take the qualificative particle, which seems the most obligatory feature for any word which might be considered an adjective in the language.

6.5 Adjective Strings and Sub-classification in Northern Sotho

Very little has been written about what happens when more than one adjective is used to modify the same noun in Northern Sotho. Structures equivalent to English PNPs such as *the big brown dog* are not discussed explicitly in any of the key texts on the language which are discussed in this chapter, although Ziervogel (1969: 60) does provide the following phrases under the heading 'general examples':

114. *dinku tše tharo tše k-golo*
N10-sheep QP10 CMØ-ADJ-three QP10 CM10-ADJ-big
'three big sheep'

115. *dikgogo tše nne tše di-ngwe*
N10-fowls QP10 CM10-four QP10 CM10-ADJ-other
'four other fowls'

From these examples it is clear that when more than one adjective modifies a noun, both adjectives follow the qualificative particle and take the concordial morpheme. De Schryver (2013: 110) also offers some examples of PNPs which reflect the pattern suggested by Ziervogel:

116. *mahlo a ma-botse a ma-tsothwa*
N4-eyes QP4 CM4-ADJ-beautiful QP4 CM4-ADJ-brown
'beautiful brown eyes'

117. *maoto a ma-telele a ma-hubedu*
N4-legs QP4 CM4-ADJ-long QP4 CM4-ADJ-red
'long red legs'

Similarly, there are examples in De Schryver's (2013: 113) dictionary which feature combinations of relative nouns, adjectival nouns and other 'peripheral' adjectival structures:

118. *mathebo a ma-botse a dinkwe*
N4-skins QP4 CM4-ADJ-beautiful QP4 REL-leopard
'beautiful leopard skins '

119. *meleme a lesometee a semmušo*
N4-languages QP4 REL-eleven QP4 REL-official
'eleven official languages'

120. *mešomo ya sekolo ye me-ntši*
N9-work SC9 N7-school QP9 CM9-ADJ-many
'a lot of school work'

These examples demonstrate the variety of appositional possibilities in modification strings. Adjectival nouns can be collocated with each other but equally with relative nouns and descriptive possessives, which in turn can appear in strings with each other. There is no discernible evidence in any of the sources consulted of combinations of verbal relative modifiers with other adjectival structures, though this will be investigated in the fieldwork discussed in Chapter 7. When considering the order within these strings, it is relevant to sub-classify adjectives beyond the morphological categories present in *Table 6.4.* Semantic-based sub-classifications are suggested by Lombard (1985: 58), Ziervogel (1969: 58), Poulos & Louwrens (1994: 91-3) and Mphasha (2010: 97-101), who each identify colours and numerals as sub-groups. Both Ziervogel and Lombard refer to all adjectives not in these groups simply as 'others', while Poulos and Louwrens divide these up more rigorously into adjectives of size, length, age, quantity, character and texture. The sub-classification I adopt is not quite so detailed as that employed by Mphasha (2010) and Poulos & Louwrens (1994) but also considers the additional adjectives proposed by Prinsloo et al (2013: 74) as well as *–kaone*, which is not identified by any of the others:

NUMERAL	SPECIFIER	COLOUR	SIZE	AGE/GENDER	EVALUATIVE
-tee (one)	*-ngwe* (other)	*-hubedu* (red)	*-golo* (big)	*-fsa* (new, young)	*-botse* (beautiful)
-pedi (two)	*-bjang* (what kind?)	*-sehla* (grey)	*-nyane* (small)	*-tala* (old)	*-šoro* (cruel, vicious)
-raro (three)	*-bjalo* (such, so)	*-tala* (blue)	*-telele* (tall)	*-tona* (male)	*-šele* (strange)
-ne (four)	*-kaaka* (this/so big)	*-so* (black)	*-koto* (thick)	*-tshadi* (female)	*-thata* (hard)
-hlano (five)	*-kaakang* (how big?)	*-šweu* (white)	*-kopana* (short)		*-be* (bad, evil)
-ntši (many)	*-fe* (which?)	*-tsothwa* (brown)	*-sese* (thin)		*-bose* (nice, tasty)
-kae? (how many?)		*-pinki* (pink)	*-tona* (big)		*-kaone* (better, best)
-nyane (few)		*-tilo* (black & white)	*-kgopo* (crooked)		*-borethe* (smooth)
		-khunou (reddish-brown)			*-boleta* (nice, tasty)

Table 6.4: Semantic Sets of Central Adjectives in Northern Sotho

The adjectives in *Table 6.4* are divided into six semantic sets or sub-groups, according largely to their meaning, with specifying adjectives grouped in this light on their common identifying function. *Kaaka* and *-kaakang* might equally be considered size adjectives, but their nature as specifiers makes them more similar to Bache's (1978) Mod-I adjectives than descriptive Mod-II terms. While *–ntši* and *–kae* are not numerals as such, they give an indication of quantity and cannot be combined with other numeral adjectives (see *Chapter 7*). Similarly, *-nyane* is included both as a numeral adjective and as an adjective of size, as it can convey both of these properties. Just as in English we can say *a little girl* or *a little water*, this is also possible in Northern Sotho. The so-called 'enumeratives' are also included in this typology as they can function with full adjectival morphology.

The adjectival roots *–kaaka* and *–kaakang* are included as specifying adjectives here, though their semantic grouping could equally be size. Mphasha (2010: 97) after Poulos and Louwrens (1994: 93) lists *–ngwe* as a numeral adjective, though it is listed here as a specifier as it can readily collocate with other numeral adjectives and conveys a sense of addition rather than quantification. The

adjective –*tsothwa* (Poulos & Louwrens 1994: 91, Mphasha 2010: 97) is preferred to the root –*sotho* which is given in Lombard (1985: 58). This term is not recognised in Prinsloo et al (2013) or Ziervogel (1969), is listed only as *tshootho* in De Schryver (2013) and was recognised most commonly as *tsothwa* in my fieldwork (see Chapter 7). It seems that, certainly in the Sepedi dialect, the form of *sotho* used by Lombard (1985) is rarely used and indeed does not appear in my corpus data.

Gender and Age are considered as one subset, as they are both social correlates based (in this case at least) on a person or animal's biological identity. There are only four terms here, those for *young/old* and *male/female*, though there are other peripheral adjectives which can convey the same semantic content. Evaluative adjectives are all those terms which convey subjective notions, evaluations which are coloured by the speaker's own unique view of the world. Adjectives of size are not delimited beyond this umbrella term, as this might lead to small subsets containing just one or two adjectives. Instead of such a sub-classification, the order among adjectives of size appearing in a string will be investigated in *Chapter 7*.

The same semantic sets can be used to sub-classify peripheral adjectives. Consider the examples of such a typology in *Table 6.5* below:

NUMERAL	SPECIFIER	COLOUR	SIZE	AGE/GENDER	EVALUATIVE
selelago (six-VREL)	*bohlokwa (rare- RELN)*	*sorolwana (yellow- RELN)*	*setsutla (fat- DP)*	*kgwadi (young- RELN)*	*lefeela (useless- DP)*
šupago (seven- VREL)	*bobedi (2nd-RELN)*	*phepolo (purple- DP)*	*boima (heavy- RELN)*	*kgale (old- DP)*	*befetšwego (angry- VREL)*
seswai (eight- RELN)	*fapanego (diverse- VREL)*	*khulong (red/brown- RELN)*	*bofefo (light- RELN)*	*mohu (dead- RELN)*	*befilego (aware- VREL)*

Table 6.5: Semantic Sets of Peripheral Adjectives in Northern Sotho

Interestingly, numerals in Northern Sotho have varied morphology. The number one (-*tee*) is usually an enumerative but also appears with adjectival morphology, while the most commonly-used

numbers between two and five are adjectival nouns. Consider the following examples (from Kotze et al 1995: 28-9):

121.	ENUMERATIVE:	1	monna o tee-	one man
122.	ADJECTIVAL NOUN:	2-5	metse ye meraro-	three villages
123.	VERBAL RELATIVE:	6-7	dilepe tše di selelago-	six axes
124.	RELATIVE NOUN:	8+	dipudi tše lesome-	ten goats

Interestingly, the verbal relative numerals come from verbs which relate to the physical counting of number on the fingers. The verb *selela* means 'to cross over' (De Schryver 2013: 204) and the number *six* is formed from the participial form *selelago*, meaning 'crossing over', as in moving over to the other hand. Beyer (1920: 21) notes that 'numeration is based on the use of the fingers. The Basuto start with the little finger on the left hand [and] pass over to the right hand beginning with the thumb'. The word for *seven* is the verbal relative form *šupago*, which means 'pointing', as it refers to the index finger of the right hand. While the higher numbers take the form of relative nouns, Beyer (*Ibid*) notes that there are older numeral forms which also take the form of verbal relatives due to their origin in the counting process. *Five* can be expressed using the verbal relative of the term *fetša seatla* (finished hand), while *eight* and *nine* can be expressed by the terms *phethago mono e mebedi* (finished but for two) and *phetago mono o tee* (finshed but for one) respectively.

6.6 Summary

Although not all theorists acknowledge the existence of a distinct word class 'adjective' in Northern Sotho, all major works on the language recognise adjective-like structures, whether they are referred to explicitly as adjectives (Mphasha 2010, Poulos and Louwrens 1994), adjectival nouns (Van Wyk 1967, Ziervogel 1969, Lombard 1985) qualificatives (Lombard 1985, Poulos and Louwrens 1994) or adjectival and pseudo-adjectival constructions (Prinsloo et al 2013). Concepts expressed by adjectives in English are not always adjectives in Northern Sotho, while concepts expressed by adjectives in Northern Sotho are not always adjectives in English.

I propose that a distinct word class of adjectives exists in Northern Sotho, with morphological behaviour which marks it out as being different from that of nouns and verbs. There are adjectives which are central to the class and others which are peripheral, though I propose the following

criterion which is the essential characteristic in determining the identity of a word as an adjective in Northern Sotho:

Any word which can follow the qualificative particle (either with or without a linking subject concord particle) is a type of adjective in Northern Sotho.

By this criterion, words known by Lombard (1985: 57) as 'adjectival nouns' and 'relative nouns' are all adjectives, as are enumeratives and verbal relatives. Descriptive possessives (Mphasha 2010: 65), quantitatives (Ziervogel 1969: 60) and possessives are not included under this definition but could be argued as being peripheral adjectives. Lombard's adjectival nouns can be considered the theoretical equivalent of English 'central adjectives', which Quirk et al (1985: 404) suggest can function both attributively and predicatively. In Northern Sotho, however, I suggest that the defining characteristic of a central adjective is that the adjective changes its prefix depending on the noun class of the modified head, adopting a concordial morpheme which agrees with the head noun. Central adjectives also exhibit prototypical morphological characteristics, including the way in which they combine with certain suffixes and the effect of reduplication.

Peripheral adjectives can be identified as any word which can modify a noun in co-ordination with the qualificative particle, but which does not take a concordial morpheme. This is the case for relative nouns (Lombard 1985: 60) and verbal relatives, the latter of which are separated from the qualificative particle by the subject concord. Enumeratives often follow a different particle from the qualificative particle and do not regularly take a concordial, but can also be found with the full morphological structure typical of central adjectives (Poulos and Louwrens 1994: 112). Further work needs to be done to determine whether this is a change in progress or a feature which is subject to dialectal variation.

The evidence in the written literature on Northern Sotho adjectives, along with the *Pretoria National Corpus* suggests that there may be as many as 42 central adjectives in the language while the number of peripheral adjectives is potentially much larger due to the usage of 'participial' verbal relatives to modify nouns. Not all basic nouns can function as relative nouns, and a useful future study might involve the provision of a more exhaustive list of nominals which can function as adjectives (i.e. which can modify a noun by following the qualificative particle). The table in *Table 6.6* displays the relative properties of central and peripheral adjectives in Northern Sotho:

Morphological type	Example	Follows QP	Takes CM	Reduplicates for intensification	Type of Adjective
Adjectival Noun	-golo	✓	✓	✓	Central
Enumerative	-šele	✓	✓	✓	Central
Relative noun	bohlale	✓	×	×	Peripheral
Verbal relative	lwalago	✓	×	×	Peripheral
Descriptive possessive	selete	×	×	×	Not adjective

Table 6.6: Properties of Central and Peripheral Adjectives in Northern Sotho

In this chapter, a strong argument is put forward for the recognition, description and sub-classification of a distinct word class 'adjective' in Northern Sotho. In Chapter 7, I investigate the relative order in which these adjectives are placed within a string of modifiers, as well as providing some more informed analyses of the semantic differences between equivalent adjectives in English and Northern Sotho.

7. Northern Sotho Data

7.0 Introduction

In this chapter, the nature of adjectives in Northern Sotho is investigated further based on evidence from the *Pretoria Sepedi Corpus* and data from original fieldwork. I will begin by providing some comment on collocational restrictions and the semantic differences between adjectives in Northern Sotho and English in 7.1. In 7.2, I provide a description and analysis of my corpus data before dissecting the data obtained through fieldwork in 7.3. In 7.4, I offer a general evaluation and propose some conclusions based on the data obtained, comparing my findings to the observations I make in Chapters 4 and 5 on the same phenomenon in English.

7.1 Collocational Restrictions and Semantic Variation

Emerging from both corpus and fieldwork data are a number of differences between adjectives in Northern Sotho and their English equivalents, both in terms of their individual semantic content and in their constructional grammatical meanings (Feist 2012). Although adjectives are translated into English in the various textbooks on the Northern Sotho language, there is some disagreement on the meaning of certain adjectives from one volume to another, and the meanings of particular adjectives in Northern Sotho regular differ from their equivalents in English. An obvious and rather unanimously agreed upon example of this is the Northern Sotho adjective *–tala*, which is a colour term covering both blue and green in English (Shai 2010). Such variation in the semantic subdivision of colour terms is very common across the world's languages (Berlin and Kay 1969). This is not the only semantic difference between English and Northern Sotho adjectives, however.

One noticeably distinctive feature of Northern Sotho which is exemplified in my fieldwork is that adjectives of size do not readily collocate with semi-antonymous adjectives of age. This is to say that in Northern Sotho and English, the semantic areas of size and age both have pairs of antonyms which represent positive and negative values of the respective property. This can be exemplified in the following diagram:

	Size	Age
+	*big (-golo)*	*old (-tala)*
-	*small (-nyane)*	*young (-fsa)*

Table 7.1: Antonymous Adjectives of Size and Age in Northern Sotho

In *Table 7.1*, it seems apparent that adjectives of size and age work similarly in both languages, but there is one key difference between the two. In English, we often use an adjective conveying a positive dimension of size with a negative value of age, and vice versa. This sounds very awkward in Northern Sotho as the two semantic areas are much more closely linked in this language. Thus, a term such as *the little old man* in English sounds perfectly natural, but the equivalent in Northern Sotho, *monna yo monyane yo motala* sounds very peculiar to a native speakers, who would regularly suggest that if a man is old, he cannot be small; only a child is small.

Many speakers in fact suggested that *–tala* 'old' is used somewhat differently to its equivalent in English. Firstly, it seems that this term is rather archaic in Sepedi and not regularly used. Many speakers at first thought I was asking them to use the colour term *–tala* (blue), which is distinguished only by tone; the colour term is a high tone followed by a low tone, while the age term has two low tones. Rather than meaning *old* in the same sense as English, *-tala* seems to have a diminutive suggestion that something is worn-out or worthless, and some speakers felt it did not collocate well with people. The alternative forms of the descriptive possessor *tša kgale* 'old' or *kgolo* 'big' were often considered more appropriate than *tala*. It only appears in the *PSC* data three times, two of which seem more likely to mean *blue* as they are collocated with another colour term and none of these modify humans:

125. *letlapo le le-golo le le-tala*
N7-slate QP7 CM7-ADJ-big QP7 CM7-ADJ-?old
'a big old slate'

126. *kuane ye tala tshehla*
N9-hat QP9 CMØ-blue CMØ-grey
'a greyish-blue hat'

127. *mafofa a mpsha le hwibidu le tala*
N6-feathers QP6 CM6-new CONJ ADJ-red CONJ ADJ-blue
'new red and blue feathers'

Each of these appearances of *–tala* is ambiguous or unclear. In (125), the adjective modifies *a big slate*, with perhaps the age adjective more likely than the colour term, as slates are typically of a darker colour. In this sense, the interpretation of the word as suggesting something is worn-out and in poor repair might be most realistic. In (126), *kuane* 'hat' is modified by *tala* immediately following the qualificative particle and followed by the colour term *tshehla* 'grey', though it is unclear both to me and my L1 research assistant whether this conveys a sense of *a bluish-grey hat*, or *an old grey hat*. In (127), the head noun is *mafofa* 'feathers', which is directly modified by *mpsha* 'new', although the other two adjectives (*hwibidu* 'red' and *tala* 'blue/old') collocate with the first adjective and to each other using *le* 'and'. It seems most likely that this refers to *new red and blue feathers*, as the combination of new and old seems improbable here.

The use of *–nyane* 'little' with animals sounds rather awkward to native speakers of Sepedi. In my fieldwork, many participants objected to *kgomo ye nnyane* as a translation of the English *small cow*. The term *namane* 'calf' was overwhelmingly preferred here. A similar issue arose when asking participants to describe monkeys (*dikgabo*) as both little (*tše nnyane*) and old (*tše tala*). Even when I suggested that some breeds of monkeys are smaller than others, and that they could be describing the older monkeys of a very small breed, many participants felt this collocation simply sounded wrong. The same kind of issue arose when I asked participants to describe girls (*basetsana)* as being tall (*ba batelele)*; participants suggested that if girls are tall then they must be *basadi* (women), and that all *basetsana* are *banyane* (small).

The word *–tona*, as discussed in the previous chapter, means either *male* or *big*, and does not collocate well with *–nyane* 'small' or *–tshadi* 'female'. The suggestion which goes with this is that masculinity is associated with large size, while femininity is associated with smaller size, possibly with origins in the animal kingdom. Similarly, the nominal diminutive suffix *–ana* can alternatively mean something is small or young. Poulos and Louwrens (1994: 66) suggest that 'various attitudes can be expressed by a speaker when he uses diminutive forms, and these attitudes are dependent on the context within which a diminutive is used'. These also include derogatory attitudes and even endearment, just as in English phrases like *a little pest* and *my little mate*. An example of this from my PSC data is *botsana*, in which the addition of the suffix to *botse* 'beautiful' suggests a sense of endearment, loosely equivalent to the English *cute*.

This variation relates to what Cinque (2010: 10-11) refers to as the distinction between 'relative' and 'absolute' adjectives. Cinque suggests that adjectives 'can be understood in an absolute sense (a big object) or as relative to a comparison class (typically provided by the noun with which they combine i.e. big for a tank)'. In English we have both of these readings of adjectives, while in Northern Sotho it seems the tendency is more towards absolute adjectives. In English, we can use relative adjectives without leading to contradiction or tautology, whilst this is not always possible in Northern Sotho:

128. English: a big elephant

Northern Sotho: **tlou ye kgolo*

129. English: a small elephant

Northern Sotho: **tlou ye nnyane*

To describe an elephant as big in Northern Sotho sounds like tautology in the same way that saying *a male man* does in English. Similarly, to describe an elephant as small seems contradictory in the same way that saying a man is female might do in English. In English, we can suggest someone is *a short basketballer*, even though he might be over six feet tall, on the grounds that the average height of a basketballer is much greater; this kind of description is simply not common in Northern Sotho. When I asked native speakers if I could say these kinds of phrases, I was commonly told that this would make me sound like a foreigner, or someone who had learnt the language but did not speak it as a mother tongue. This all suggests strongly that adjectives in Northern Sotho are predominantly absolute.

These are not the only semantic differences between Northern Sotho adjectives and their English equivalents. The adjective root *–ntši* is commonly translated into English as *many* (De Schryver 2013: 11, Prinsloo 2009: 9, Mojela 2006: 74) and does indeed seem to convey this basic idea of a multiple number. However, it seems to have a more specific function when modifying certain nouns. In my questionnaire, question 25 involved the phrase *barwarre ba bantši* meaning *many brothers*. However, some participants suggested that this had a different meaning, as *barwarre* has the broader meaning in Northern Sotho of referring to not only brothers, but also cousins (Prinsloo 2009: 109). It is not uncommon for languages to have particularly different systems for organising kinship terms (see among others, Moravcsik 2013: 36-39, Saxena 2012 and *Omniglot.com*), but what is interesting here is how this noun combines with the adjective meaning *many*. In Northern Sotho, *barwarre ba bantši,* rather than simply referring to a large number of brothers, can suggest that the brothers come from a variety of mothers. This can perhaps be explained by the fact that *barwa*, the

morphological root of this word, means *son*, and suggests that the adjectival root *–ntši* might also be considered to convey a meaning of distinction similar to *various* or *different* in English.

Some adjectives in Northern Sotho do not seem to collocate well with other adjectives; these include adjectives which imply an exclamative or interrogative: *kae 'how many?' bjang* 'what kind of?'*, kaaka* 'so big!'*, bjalo* 'such!' (Lombard 1985: 59). The inclusion of the question particle *ke* was generally preferred by participants when using *–kae* or *–bjang* to modify a noun in examples such as the following:

130. *ke* *di-tlou* *tše* *kae?*
INT.PART N10-elephants QP10 CMØ-ADJ-how.many?
'how many elephants?'

131. *ke* *sebjanatsopa* *se* *se-bjang?*
INT N7-clay.pot QP7 CM7-ADJ-what.kind?
'what kind of clay pot?'

None of these adjectival roots which suggest exclamations or questions appear in the *PSC*, suggesting that they do not readily collocate with other adjectives in PNPs. They are investigated in my questionnaire and are discussed at length in section *7.3* below.

One final feature which is apparent in Northern Sotho adjective strings is the presence of *ngwe* 'another' modifying the same head noun twice. This structure appears seven times in the *PSC* (out of 98 tokens with other central adjectives) and my participants informed me that this phrase has the constructional grammatical meaning (Feist 2012: 37) of the English term *every*. Thus, we find:

132. *tšatši* *le* *le-ngwe* *le* *le-ngwe*
N5-day QP5 CM5-ADJ-other QP5 CM5-ADJ-other
'every day'

133. *nako* *tše* *di-ngwe* *tše* *di-ngwe*
N10-times QP10 CM10-ADJ-other QP10 CM10-ADJ-other
'every time'

7.2 **Corpus Data**

In my extracted data there were 608 tokens of N-ADJN-ADJN and 338 containing an adjectival noun and a relative noun, each of which is referred to by its cell number in the respective spreadsheet in the appendices. While this provides a reasonable sample of modification strings, it does not extensively exemplify the range of collocational possibilities for adjectives in Northern Sotho. The adjective *–kopana* 'short', for example, only occurs once in a PNP in the corpus, in the phrase *dikgopo tše nne tše kopana 'four short ribs'*. This tells us very little about the different sequences in which the adjective *–kopana* can appear. Similarly, the adjectives *–bose, -sese, -šoro* and *–thata* all appear in less than five PNPs in the corpus, again allowing for only minimal levels of analysis.

Not all of the tokens extracted from the corpus were relevant to the study; in fact less than half were counted in my data. This is because, by the criteria established in the previous chapter, only adjectival nouns which immediately follow the qualificative particle and take a concordial morpheme expressing agreement with the noun class of the head were counted as 'real' adjectives. Consider the following two examples:

134. A250: *koloi tše k-golo tše pedi*
N10-cars QP10 CM10-ADJ-big QP10 CMØ-ADJ-two
'two big cars'

135. A310: *mmala wo mo-šweu le bo-tala*
N3-colour QP3 CM3-ADJ-white CONJ CM14-ADJ-blue
'a white colour and blue…'

In (134), the head noun *koloi* 'cars' is modified by two adjectives *–golo* 'big' and *–pedi* 'two'. This can be seen in the dual appearance of the qualificative particle *tše* with each adjective. The first adjective *–golo* expresses agreement with the head (noun class 10) through the concordial morpheme *k-*, while the second takes a zero concord. It is clear that this is a 'real' PNP in which the head is modified directly by both adjectives. In (135), the first adjective *mošweu* 'white' clearly modifies the head *mmala (colour)*. It follows the qualificative particle *wo* and takes the concordial morpheme *mo-*, both of which express concord with the head noun which is in noun class 3. It is, however, apparent that the second adjective (*botala* 'blue'*)* is not modifying the noun here. It is not preceded by the qualificative particle, rather by the co-ordinating conjunction *le (and)*, and takes the concordial morpheme *bo-* which suggests membership of noun class 14. Nouns in class 14 are typically non-count nouns (Prinsloo et al 2013: 12) and when the *bo-* prefix is attached to adjectival

roots, it nominalises them with the same effect that the suffix *–ness* does in English. Thus, *bogolo* means *size* (from big), *bošweu* means *whiteness*, *bofsa* means *youth* (lit. young-ness) and *bobotse* means *beauty* (all definitions from De Schryver 2013). In this regard, I have only included in my data set tokens such as A250 above which feature identical qualificative particles and non-contrastive concordial morphemes, and a full list of all counted examples is included as an appendix.

The adjective root which appears most commonly in PNPs is *–ngwe* 'other', which appears a total of 157 times in my data; 98 times in the ADJ-ADJ dataset, and 59 times in the RELN-ADJ dataset. Of the 98 tokens in which *–ngwe* collocates with another adjective (not including the 7 times it appears twice in one NP), 89 feature noun phrases in which *–ngwe* precedes the other adjective in the string. The fact that *–ngwe* appears so commonly in PNPs and that it comes closest to the noun in 91% of tokens, means that the percentage of PNPs in which other roots precede their collocate is naturally much lower than this figure. The table in *Table 7.2* illustrates the collocational behaviour of *–ngwe* in the dataset:

Collocate	Sem-type	ngwe-X	X-ngwe	Total	% initial
-golo	size	17	3	20	85
-bedi	num	15	2	17	88
-ntši	spec/num	14	2	16	88
-botse	eval	9	0	9	100
-fsa/swa	age	6	0	6	100
-be	eval	5	1	6	83
-nyane	size	6	0	6	100
-raro	num	3	0	3	100
-hlano	num	3	0	3	100
-šweu	col	3	0	3	100
-kaone	eval	3	0	3	100
-so	col	3	0	3	100
-telele	size	1	1	2	50
-ne	num	1	0	1	100
TOTAL		89	9	98	91%

Table 7.2: Collocations with –ngwe in PNPs in the PSC

It is clear from these data that *–ngwe* appears far more commonly in string-initial position than it does in PNPs in which it follows another adjective. This happens in only 9% of tokens, with *–telele*

'tall' being the only adjective which does not follow *-ngwe* in the vast majority of collocations. This, however, is almost certainly down to the fact that it collocates with *–ngwe* on only two occasions, one of which sees *–telele* precede *–ngwe* (A13: *moisa yo motelele yo mongwe*- another tall fellow). The incidence of 9% of tokens showing *–ngwe* following another adjective provides evidence that adjective order is not fixed in Northern Sotho, but can be changed possibly for means of focus or emphasis. Three of 20 collocations with *–golo* 'big' feature the size adjective in string-initial position, while this inverse pattern also occurs twice in collocations with *pedi* 'two' and *–ntši* 'many', and once with *–be* 'bad'.

Even numerals regularly follow *–ngwe* (in 90% of tokens in the dataset), which is the only adjective to commonly precede numerals in the corpus. The numeral adjective *pedi* appears 48 times in the dataset, and is in string-initial position in 65% of tokens; however, when those sequences in which it follows *–ngwe* are disregarded, it appears at the head of a string in 94% of tokens. This pattern is indicated in the chart in *Figure 7.1* below. Similar patterns occur with the other numeral adjectives in the data set, with *–raro* (three) occurring ahead of descriptive adjectives in 75% of tokens and *–ne* (four) and *hlano* (five) also appearing in string-initial position in the majority of cases. The adjective root *–ntši* is also considered a numeral in this dataset as it cannot exist alongside a numeral and conveys the same semantic information in that it describes the number of the head. It is one of very few adjectives which can precede *–ngwe* in the data (in 12% of tokens) and appears at the head of a modification string in 65% of tokens in which it does not collocate with *–ngwe*. This suggests that in the unmarked order of modifiers, numeral adjectives are second only to *–ngwe*.

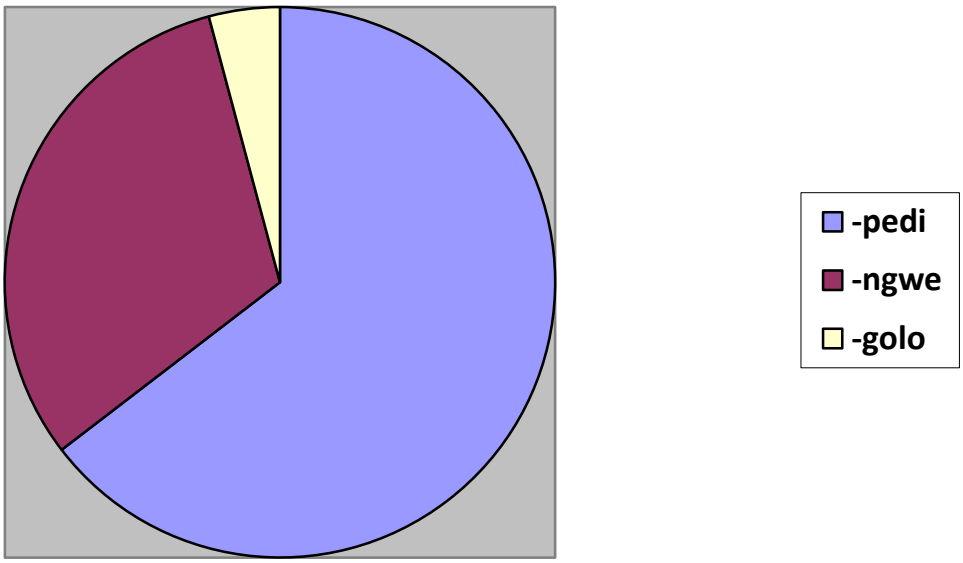


Figure 7.1: Adjectives Most Commonly Heading Modification Strings Featuring –pedi

The most commonly occurring adjectives after numerals and *–ngwe* are those denoting size. Adjectives of dimension (to use Dixon's 1982/2006 preferred label) commonly appear next in a sequence after these first two semantic types and include *–golo* ('big' 55 tokens), *-telele* ('tall' 28 tokens) and *–nyane* ('small' 10 tokens). Less common size adjectives are *–koto* ('thick' 7 tokens), *-šeše* ('thin' 4 tokens) and *-kopana* ('short' 1 token). The table below indicates how commonly adjectives of size appear first in a sequence of adjectives depending on the semantic type of the adjective with which it is collocated:

	with –ngwe	*with numeral*	*with other size*	*with colour*	*with other*
-golo	15%	21%	83%	56%	100%
-telele	50%	20%	38%	83%	50%
-nyane	0%	0%	n/a	100%	n/a
-koto	n/a	0%	25%	100%	100%
-šese/-kopana	n/a	0%	33%	100%	n/a
TOTAL	15%	19%	50%	75%	88%

Table 7.3: Percentage of Tokens Featuring Size Adjectives in String-initial Position

As can be seen in the table above, size adjectives typically follow numeral adjectives and *–ngwe* in this data set. They also appear before colour adjectives and other evaluative adjectives in a high

percentage of tokens. The exception here is that *–golo* collocates fairly evenly with adjectives of colour, appearing in string-initial position only 56% of the time. This is due to four duplicate tokens within the corpus of the PNP *mahlo a mašweu a magolo* 'big white eyes'. This ordering is most likely employed to emphasise the whiteness of the subject's eyes to stress surprise, eagerness or observation, and perhaps leads to a less representative percentage for the number of times colour terms would precede size adjectives in natural language. Even with this example considered, it is clear that adjectives of dimension seem to come third in an unmarked sequence.

What is also noticeable from *Table 7.3* is that *–golo* tends to precede other adjectives of dimension, with 83% of collocations with other size terms featuring *–golo* in string initial position. The only phrase in which it is preceded by another size adjective is in A580 with *lentšu le lekoto le legolo* 'a big loud voice', in which *–koto* is placed closer to the head presumably to emphasise the volume or strength of the voice. This token, along with the four tokens mentioned in the previous paragraph are the only instances in the data when *–golo* is preceded in a string by an adjective other than *–ngwe* or a numeral.

The early position of *big* supports the analysis of the semi-adverbial function of adjectives placed early in a string (Quirk et al 1985: 1339), with a more general term such as *–golo* being qualified later in the string by a more specific adjective of dimension such as *–koto* 'thick'. Huddleston and Pullum (2002: 562) refer to such structures as exemplifying a notion of 'intensificatory tautology', with the first, less specific quality having the function of intensifying the effect of the latter.

In light of these observations, we can hypothesise that more evaluative adjectives and colour terms will appear later in a string. As to the relative positions of adjectives within these groups, there are very few tokens in the *PSC* on which to base any reliable conclusion. However, in eight collocations between colour terms and broader evaluative adjectives, the colour term follows the evaluative in each and every example. This is a fairly strong indication that, as in English, colour terms follow more general descriptive adjectives (Dixon 1982: 25, Goyvaerts 1968, Spankie 1987: 182 and Alexander 1990: 87 among others). There are only two collocations between the evaluative adjectives, in which *–be* 'bad' precedes *–šoro* 'cruel' (in A53, modifying *dišo-* sores) and *–botse* 'beautiful' (in A526). In the latter example, the adjectives are collocated using *le '*and' so that *bad* and *beautiful* function in contrastive parataxis. In collocations with adjectives other than colour terms, however, evaluative adjectives appear in string-initial position in only 10% of tokens, which is in common with the notion that subjective adjectives are placed further from the head than objective adjectives (Whorf 1937; Ghesquire 2009).

Based on the data from the *PSC*, there is a fairly predictable order within strings of central adjectives in Northern Sotho:

-ngwe > NUMERALS > -golo > OTHER DIMENSION ADJECTIVES > EVALUATIVES > COLOURS

This order is based on 213 tokens in which more than one adjective was used to modify the same noun, and only 32 of these examples feature a sequence which does not follow the above pattern. This means that the order of adjectives in a string can be predicted with 85% success based on the suggested paradigm, but that adjectives can be rearranged into a non-normative pattern in order to add stress or emphasis, usually on the first adjective in the sequence.

Furthermore, central adjectives (adjectival nouns, Ziervogel 1969: 59) precede peripheral adjectives in 91 tokens, while peripheral adjectives were found to precede central adjectives on just 14 occasions, with six of these tokens featuring structures labelled as relative nouns despite in fact being adjectival nouns with a morphological modification:

136. *monnatsoko yo mo-so-mo-so yo mo-telele*
N1-someone QP1 CM1-RDP-CM1-ADJ-black QP1 CM1-ADJ-tall
'a tall, very black man'

137. *moretlwa ye teletšana ye tshese*
N9-starbush QP9 CMØ-tall-DIM QP9 CM9-ADJ-thin
'a quite tall thin starbush'

In each of these examples, the structure labelled as a relative noun is in fact an adjectival noun. (136) includes a fully reduplicated version of the adjective root *–so* 'black', with both stem and prefix being reduplicated to form the superlative, while (137) features a diminutive of the adjective root *-telele* 'tall', meaning 'quite tall'. The six examples of relative-adjectival collocations which feature adjectival roots are not considered to be pure examples of this structure and are hence disregarded in this study. This leaves just eight tokens in which relative nouns precede adjectival nouns in a sequence, such as *sefolo se bogale se sefsa* 'a sharp new spade', in which the peripheral adjective *bogale* precedes the central adjective *–fsa*. When compared to the 91 tokens in which relative nouns follow adjectival nouns, peripheral adjectives precede central adjectives in less than 10% of PNPs.

The data in the corpus allow us to make some valuable observations of trends which seem to occur in the ordering of adjectives, but there are also many things which they cannot tell us. These questions are investigated further through field-based methods and include:

- Which orders are perceived as ungrammatical in Northern Sotho?
- Which are permissible but sound strange to a native speaker?
- Which orders are marked and suggest emphasis?
- Are there collocations of adjectives in Northern Sotho which convey a constructional grammatical meaning (Feist 2012: 37) which is different from that in English?
- Are there adjectives which cannot be collocated with (certain) other adjectives?

7.3 **Fieldwork Data**

The first five questions were designed to investigate the positioning of numeral adjectives when co-ordinated with non-numeral adjectives and each provided a return of between 67% and 80% of participants placing the numeral in string-initial position. This suggests that numerals typically precede non-numerals, although this order is reversible if a speaker wishes to emphasise the quality of the object, or to specify the head based on the non-numeral adjective, as indicated in the examples below, both of which were returned by participants.

138. *dieta tše pedi tše ntsho*
N10-shoes QP10 CMØ-ADJ-two QP10 CM10-ADJ-black
'the two black shoes'

139. *dieta tše ntsho tše pedi*
N10-shoes QP10 CMØ-ADJ-black QP10 CM10-ADJ-two
'the black pair of shoes'

Just as in English, both of these orders are grammatical and coherent, although the second specifies a black pair of shoes, potentially within a collection of different coloured pairs. This all depends on the way in which a speaker organises a group of objects in his head and reflects Bache's (1978) principle of specification. Participants uniformly agreed that this was the case and although both orders are feasible, the most natural-sounding and unmarked order seems to be the former (Numeral-colour), which was returned by 80% of participants. Interestingly, the numerals 1 and 2 appear more commonly in string-initial position than 3 and 4, with 5 being the lowest of all. The results for questions 1-5 are displayed in *Figure 7.2:*

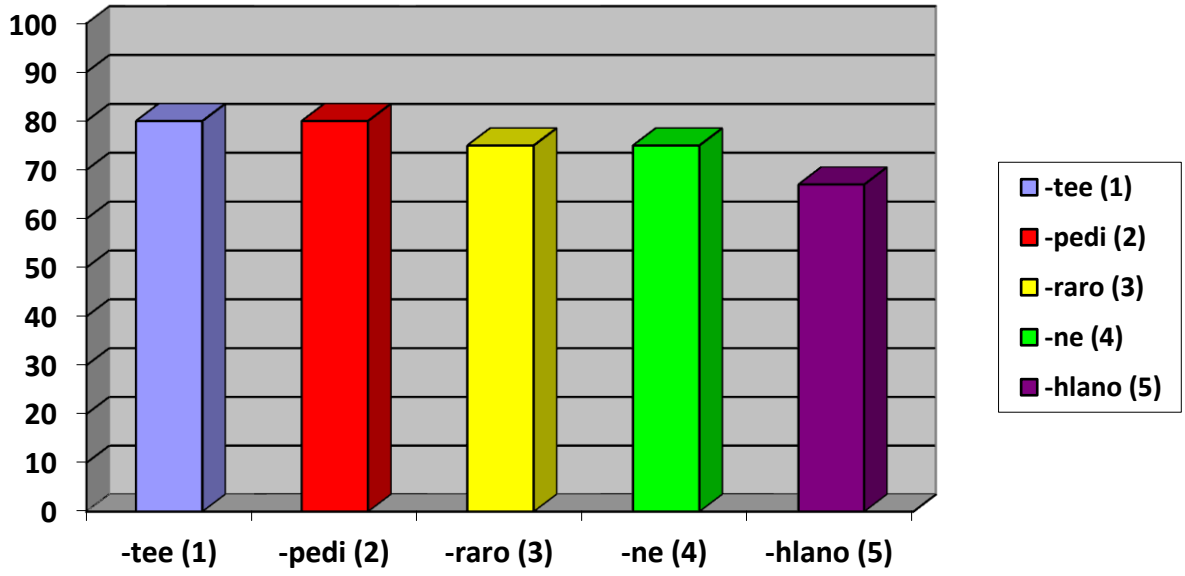


Figure 7.2: Percentage of Tokens with Numeral in String-initial Position

The adjective *–ngwe* appears in five questions in the questionnaire; it was considered that, with the overwhelming evidence from the corpus data that this adjective typically precedes other kinds of adjective, it did not need to be a major focus in the questionnaire. However, a degree of validation was deemed to be desirable, and *-ngwe* was combined with adjectives with which it did not collocate in the corpus in order to investigate its behaviour further. These included the numeral-enumerative root *–tee* 'one', the interrogative adjective *–kae* 'how many' and the verbal relative *go ja* 'eating'.

Question	Head	Collocates		String-initial
12	Basadi (women)	-telele		93%
20	Meago (villages)	-raro	-tala	93%
16	Motho (person)	-tee	-be	83%
36	Dinku (sheep)	-sese	go ja	83%
24	Ditlou (elephants)	-kae	-golo	27%

As indicated in the table above, the results largely support the suggestion, based on the corpus data, that *–ngwe* predominantly appears in string-initial position in unmarked orders. Four out of the five questions here have an average of 87% of tokens featuring this 'normative' ordering, while question 24 has *–ngwe* first in the sequence in only 27% of tokens. Question 20 is the only question in the data which features *–ngwe* collocated with a numeral, and the numeral appears at the head of the

string in only 7% of tokens. The evaluative adjective *–tala* 'old' does not function ahead of both of these adjectives in any tokens whatsoever, and appears furthest from the noun in 87% of responses.

Discussions with participants suggested that the exception in question 24 was due to an unnatural sounding collocation between *–kae* 'how many?' and two other adjectives. This adjectival root suggests an interrogative and does not appear at all in the data set from the *PSC*, and the field data strongly support the notion that this adjective does not readily collocate with other adjectives. For the phrase, *ditlou tše dingwe tše kgolo tše kae* 'how many other big elephants?', 17% of participants left out *–ngwe* altogether as they felt *-kae* collocated more readily with *–golo* than with the two adjectives combined, while 7% of participants felt that a collocation which placed the interrogative adjective before the noun seemed more plausible. This response seems to reflect the order in English, a transfer of patterning which has been noted in Welsh adjective strings (see Davies 2008 and *Chapter 8*), and strongly suggests that participants were trying to be innovative in proposing a preferred order for a collocation which does not sound natural in the language.

This root was also investigated in two other examples in the questionnaire, which also presented problems for participants. For question 15, just 60% of participants suggested *dimpša tše tala tše kae* as the normative order for the English phrase *how many old dogs*, with a number of participants preferring to start the phrase with interrogative particle *ke* (lit. 'it is'- Poulos and Louwrens 1994: 379). The results for this example showed no clearly preferred order, and the same is the case for question 30, in which seven different responses were given, and 3% of participants did not feel they could supply an answer. The most popular order was *boramotse ba bakae ba batona ba ma Afrika* 'how many male African mayors?', which was returned by only 30% of participants. This was made more complicated by an apparent tautology in the phrase *boramotse ba batona* which described an already assumedly masculine head as being male.

The interrogative adjective root *–bjang* 'what kind of?' was included just once in the questionnaire, in question 18, which asked participants to modify *sebjanatsopa* 'vase' with the adjectives *–bjang, -botse,* and *–so*, to give the constructed meaning of *what kind of beautiful black vase?* Although *sebjanatsopa* appears in Prinsloo's (2009) dictionary, it was not recognised by the majority of my participants and it seems to be a modern coinage (Mokgoatjana, P/C 2013) blending the terms *sebjana* 'clay' and *tsopa* 'pot'. This question caused considerable problems for participants, who noted that the noun phrases sounded unnatural when additional adjectives were included with *-bjang*. It was commonly felt that *sebjanatsopa se sebjang* worked fine as *what kind of vase,* and that *sebjanatsopa se sebotse se seso* sounded fine as *a beautiful black vase*, but that the two combined

sounded ungrammatical. A very common observation was that the phrase in its entirety sounded more like a question and an answer than one PNP:

140. Question: *sebjanatsopa* *se* *se-bjang?*
N7-vase QP7 CM7-ADJ-what kind?
'what kind of vase?'

Answer: *se* *se-botse* *se* *se-so.*
QP7 CM7-ADJ-beautiful QP7 CM7-ADJ-black
'a beautiful black one.'

This seemingly interactional nature of the phrase is based on the possible nominalisation of adjectives and on the semantic and syntactic variation between different adjectival subclasses in Northern Sotho (Poulos and Louwrens 1994: 92, Lombard 1985: 59, Mphasha 2010: 97-8). As adjectives can function (with the qualificative particle) as nominal heads (Ziervogel 1969: 58), they can thus be seen as an answer to a question brought about by an interrogative adjective such as *-bjang* appearing earlier in the string. The combination of these Northern Sotho adjectives is possible in English due to the fact that *what kind of* is a determinative phrase (see Denison 1998: 121-122 and others, on this kind of structure), which typically occurs in a fixed position ahead of the adjectives. Similarly, adjectives in English tend not to function as nominal heads without a determiner, making the answer suggested above somewhat different in terms of syntactic structure.

The order of semantic subclasses of adjectives in the fieldwork largely reflects that suggested in the corpus data. In questions 6-21, I investigate these subclasses by providing a varied selection of collocations with a view to eliciting a broad and deep data set from which to make strong observations as to what the most dominant orders may be. As in the corpus data, adjectives of dimension typically precede colour terms and evaluative adjectives. Size adjectives feature in six of these examples and in all cases, they appear closer to the noun than other descriptive adjectives in the majority of responses. In questions 6 and 10, size adjectives (*-golo*) precede adjectives of colour (*-tsothwa* 'brown'*)* and evaluation (*-be '*bad') in 77% of responses, while in question 11, the gender term *–tona* precedes the size adjective *–nyane* in only 23% of examples.

There are five collocations in this section between colour terms and evaluative adjectives, with questions 7 and 8 both featuring adjective bigrams in which evaluatives precede colours in an average of 75% of responses. In question 17, the phrase *mae a manyane a mašweu a mabose* 'delicious small white eggs' features one of each of these subclasses collocated with a size adjective.

The size adjective *–nyane* appears in string-initial position in 60% of responses, while *–bose* heads the phrase in 20% and the colour term *šweu* in just 17%. In total, the evaluative precedes the colour term in only 30% of responses to this question, with the term for *white* presumably being considered as more closely linked to the head noun *egg* than the more subjective adjective *delicious*. This can be linked to Dixon's (1982: 24) notion of 'fixed idiomatic collocations' and once again to the suggestion that more objective and essential properties appear closer to the head than more subjective value judgements (Whorf 1937; Ghesqière 2009).

Question 21 features two evaluative adjectives collocated with an adjective of dimension and a colour term in the phrase *dikgabo tše nnyane tše mpe tše tala tše disotho* 'little evil old brown monkeys'. This was the preferred order returned by 40% of participants and included, as would be expected from the predictions based on the corpus data, a size adjective in string-initial position and the colour term furthest from the noun. The age term *–tala* precedes the colour term in 82% of tokens, while the evaluative *mpe* precedes the colour term in 75%, meaning that colour terms follow evaluatives in 78% of responses overall. When colour terms are collocated with evaluative adjectives in my questionnaire, the colour term comes further from the head 66% of the time.

The latter half of the questionnaire is dedicated to the analysis of how relative nouns, descriptive possessors and verbal relatives pattern with adjective nouns, as well as how extended sequences of adjectives behave in Northern Sotho. In *Chapter 5,* I note that in longer strings of English adjectives, the order becomes less normative and fixed, with strings often being divided into smaller units in order to make sense of the phrase. In *Chapter 6,* I outline the structural differences between the different morphological types of adjective, noting that these do not necessarily coincide with semantic differences. Consider the following examples in *Table 7.4:*

Morphological Type	Form	Example	Translation
Adjectival Noun	Qualificative Particle + Concordial Morpheme + Adjectival Root	*Monna yo mogolo*	*Big man*
Enumerative	Enumerative Particle (+ concordial morpheme) + Adjectival Root	*Monna yo mošele*	*Strange man*
Relative Noun	Qualificative Particle + Basic Noun	*Monna yo maatla*	*Strong man*
Descriptive Possessor	Possessive Concord + Basic Noun	*Monna ya kgale*	*Old man*
Verbal Relative	Qualificative Particle (+ Subject Concord) + Verbal Participle	*Monna yo befetšwego*	*Angry man*

Table 7.4: Morphological Types in the Northern Sotho Word Class 'Adjective'.

All of these types convey the meaning of central adjectives in English, but each has a different morphological structure. This makes these forms particularly interesting in a study of sequencing within modification strings. In English, the order of adjectives is explained based on semantic, functional and contextual order theories (see *Chapter 4* and *5*). Vendler (1968: 126) suggests that ordering is almost completely down to semantic features, claiming that orders are fixed and that 'hardly any change in the order is possible'. Coates (1977: 12), however, suggests that the morphological form and function of an adjective is most important, while Quirk et al (1985: 1342) suggest that 'writers and speakers will naturally arrange premodification […] according to their communicative intentions'. The ordering of adjectives with different morphological forms in Northern Sotho may shed some light on which of these observations is most applicable.

The results of the questionnaires are somewhat mixed. The most common trend is that adjectival nouns tend to precede relative nouns which in turn tend to precede descriptive possessors and verbal relatives. This is, however, not always the case and order seems to be variable, allowing speakers to foreground one quality or other depending on the order in which they choose to place them within the string. In question 26, participants were asked to modify *marotho* 'loaves' using the adjectives *–nyane* 'small' and *–tsotho* 'brown' and the relative noun *boleta* 'soft'. The results for this

question suggest that any order is possible for this noun phrase, with all the modifiers capable of functioning first, second or third within the modification string. Consider the table in *Table 7.5:*

26	Marotho a mannyane a matsotho a boleta	size-col-rel	10	33
	Marotho a mannyane a boleta a matsotho	size-rel-col	7	23
	Marotho a boleta a mannyane a matsotho	rel-size-col	4	13
	Marothwana a matsotho a boleta	Hsize-col-rel	3	10
	Marotho a matsotho a mannyane a boleta	col-size-rel	2	7
	Marotho a boleta a matsotho a mannyane	rel-col-size	1	3
	Marotho a matsotho a boleta a mannyane	col-rel-size	2	7
	(no answer)	(n/a)	1	3

Table 7.5: Responses to Question 26

As would be expected based on the corpus data, the adjective of dimension (*-nyane*) appears in string-initial position in the two most popular answers, which constituted 57% of all responses. A further 10% replaced the collocation *marotho a mannyane* (small loaves) with the morphological diminutive *marothwana*, meaning as many as two thirds of participants preferred the size adjective to be most closely associated with the noun. The relative noun *boleta* is most popularly placed at the end of the string, appearing here in exactly half of the responses. However, it also appears in string initial position in 17% of the responses and appears before the adjective and colour term *tsotho* in more than a third of participants' preferred responses. It is placed between the size adjective and the head in only 10% of responses, but these figures do suggest that relative nouns can appear anywhere in the string, depending on the desired focus of the speaker.

Relative nouns exhibit a tendency to follow adjectival nouns in a high majority of cases within the questionnaire. In question 28, the relative noun *monate* is furthest from the noun in 73% of responses, while this is the case in 67% of responses for *bohlale* in the following question. In question 22, 67% of participants placed the relative noun *boima* at the end of the string, although the fact it also appears in 13% of tokens in string-initial position suggests there is some scope for variation here. In this particular example, *dihlare tše koto tše telele tše boima* 'thick-tall-heavy trees' is the preferred order. As these are all terms associated with dimension, it seems most common that width precedes height which in turn precedes weight. However, many participants felt this sequence was problematic in that the terms *-koto* and *-telele* were not considered easily compatible. It seems that if something is described as *tall* in Northern Sotho, there is a suggestion that it is also considered to be *thin*. The two adjectives *-koto* and *-telele* do appear together once in the corpus

data, although the latter collocates three times with the more closely associated adjective *–šeše* (thin).

This tendency is reflected in responses to question 23, in which the relative noun *nanana* (tender, young) appears closer to the head than the adjective *–tona* in a high majority of responses. This is an interesting term in that some speakers felt it collocated naturally with the head *ditshwene* 'baboons, while others felt it was less appropriate, considering it semantically more like the English adjective *juicy*. The cognate in Tswana (*-nana*) is an adjectival noun meaning *young* or *fresh* (Doke 1954: 135), with a similar meaning to the Northern Sotho central adjective *nyane* as mentioned in the previous example (whose Tswana cognate is *–nnye*). One in three speakers placed this adjective at the head of the string, while a further 10% actually replaced it with the diminutive suffix, as in the previous example (*ditshwenyana* 'young baboon'). An additional 10% replaced the head with the noun *dirotwana* 'a young male baboon', thus eliminating the need for either of these adjectives.

The third modifier in this example, which appears in string-final position in 60% of responses is the verbal relative *befetšwego* 'angry'. This also displays some mobility within the string however, and appears in string initial position in 27% of responses. This reflects patterns I found in English (*Chapter 5*) in which participial adjectives typically occupy the periphery of a string and less commonly break up a string of central adjectives.

The verbal relative always follows the qualificative particle in my data, though there was some disagreement between speakers as to whether it required the subject concord as well. According to Ziervogel (1969: 55), this is an obligatory feature in the structure of a verbal relative, and its inclusion is the standard form (Mokgoatjane 2013, P/C), though the fact that many speakers felt it sounded more natural without it suggests a possible shift in usage. It may be the case that verbal particles such as *befetšwego,* which are highly descriptive in nature, are more like relative nouns and hence drop the subject concord, particularly in vernacular usage.

Chelliah and De Reuse (2011: 402) note that particles are a particularly interesting subject to test in fieldwork studies, suggesting that they 'may show up in elicited sentences, but this cannot be relied upon'. The authors suggest that there may be some variation in the placing of particles and advise that 'asking about combinations and particle orders and varying their position in a sentence is also useful' (2011: 402). Although *befetšwego* is the only morphological participle in the questionnaire, there are other verbal relatives which can be paraphrased in this way. Many participants suggested that in question 29, *nku ya go ja* 'a sheep which is eating' was less natural-sounding than *nku ye*

fulago ‘a grazing sheep’. Some participants felt that the verb *ja* was more suited to human subjects, while others felt it was acceptable for both humans and animals.

141. *nku ya go ja*
N9-sheep POSS IMPERF V-eat
‘a sheep which is eating’

142. *nku ye fulago*
N9-sheep QP9 VREL-grazing
‘a grazing sheep’

There are seven other verbal relatives in the questionnaire, all of which most commonly appear further from the noun than any relative nouns or adjectival nouns in the string. In question 34, *ba go rapela* ‘praying’ follows *-tala* ‘old’ in 70% of responses when modifying *baprista* ‘priests’, while in question 36, *ya go ja* ‘eating’ appears in string final position in 86% of responses in coordination with the adjectival nouns *–ngwe* and *–šeše*. Interestingly, question 35 features a phrase which many participants felt was fully reversible depending on context. *Dinonyana tše sorolwana tša go opela* ‘the yellow singing birds’ was preferred by only 53% of participants, with the verbal relative preceding the relative noun in the remaining 47%. The reversible nature of this noun phrase supports a suggestion that verbal relatives should be considered peripheral adjectives, based on common syntactic behaviour.

143. dinonyana tše sorolwana tša go opela
N10-birds QP10 RELN-yellow POSS IMPERF V-sing
‘the singing yellow birds’

A particularly interesting question featuring verbal relatives is question 37, which combines a numeral adjective (*hlano* ‘five’) with two verbal relatives in modifying the head noun *dikolobe* ‘pigs’. The first of these, *tša go befa* is semantically very much like an adjective in that it means *ugly*, while the second is far more verbal as *tša go kitima* means *running*. Laskova (2007: 125) differentiates between ‘verbal’ and ‘adjectival participles in English based on their semantic and morphological characteristics, while in Northern Sotho, there is no clear morphological distinction. Syntactically, however, there is a marked difference between the position these two types occupy in a string. The more adjectival verbal relative precedes the other verbal relative in 77% of responses, with *tša go kitima* also appearing in string-final position in 77% of cases. The more adjectival form also appears in string-initial position slightly more commonly than its verbal counterpart.

While verbal relatives seem to commonly follow other adjectives, question 39 features a long PNP in which the verbal relative *sa go kganya* 'shining' appears closer to the noun than the descriptive possessive *sa Polokwane* in 77% of responses. This suggests that verbal relatives tend to be placed closer to the head than descriptive possessors, although this is an area which requires further investigation as it is only touched upon briefly in my fieldwork. This question featured by far the most complex PNP in my data and posed significant problems for my participants. There were twenty different orders suggests by participants as the most natural, with only two out of three responses including all five adjectives. Of the twenty orders returned, only five were selected by more than one participant. The string included a descriptive possessor, a verbal relative, and three central adjectives and the most popular answer was given by just 20% of participants:

144. *sebjanatsopa se se-bjalo se se-golo se se-tala sa go*
N7-vase QP7 CM7-ADJ-such QP7 CM7-ADJ-big QP7 CM7-ADJ-blue PC IMPERF

kganya sa Polokwane
V-shine PC N-Polokwane
'such a big blue shining Polokwane vase!'

Similarly, the final question, which featured four adjectives, also returned a large number of different responses. The variation between the different answers offered by participants reflects that shown by participants in my English fieldwork (*Chapter 5)*, who suggested 16 different orderings for the phrase *the typical large gloomy angular country house*. It seems that when so many adjectives are used together in a string, it is difficult to create a logical and coherent 'constructional grammatical meaning' (Feist 2012: 37). In the responses to question 39, all five adjectives appear at the head of the string and at the end of the string in at least one response, with the exception of *–tala* 'blue' which does not appear in string-final position. This indicates strongly that the intuitions of participants here were somewhat hypothetical and in most cases do not reflect any systematic logic in the way in which adjectives are ordered.

7.4 **Summary**

Adjectives in Northern Sotho, like in English, do seem to follow a fairly predictable order. Both sets of data analysed in this chapter, the data from the *Pretoria Sepedi Corpus* and that from my original fieldwork suggest a basic unmarked order based on the morphological and semantic properties of Northern Sotho adjectives. This order can be simplified as follows:

ADJECTIVAL NOUNS > RELATIVE NOUNS > VERBAL RELATIVES > DESCRIPTIVE POSSESSIVES

The order among adjectival nouns is similar to that of English (Dixon 1982: 25; Scott 2002: 114, among others) and suggests a common semantic-based order theory for multiple adjectives within a modification string. This order can be simplified as follows:

-ngwe > NUMERALS > *-golo* > OTHER DIMENSION ADJECTIVES > EVALUATIVES > COLOURS

The order among verbal relatives seems to reflect Laskova's (2007: 125) distinction between adjectival and verbal participles in English, in that terms which suggest a property or characteristic and hence have a more adjectival quality tend to precede terms which are more verbal in nature. The ordering among descriptive possessors and relative nouns is an area which is not really covered in this study, but one which merits further investigation. Whether or not strings of descriptive possessors follow Bache's (1978) principle of specification and whether the above semantic order also affects sequences of relative nouns are two areas which deserve attention. Where morphology is consistent among modifiers in a string, subjective qualities tend to be placed further from the head than more objective qualities, reflecting the same pattern in English.

Finally, although there is a fairly predictable unmarked order of adjectives, it seems very rare that this order cannot be reversed to provide stress, focus or emphasis by providing a marked order. This was a regular observation during my fieldwork and there is considerable evidence in both the field data and the corpus data to support this. It seems that focalisation can justify almost any potential ordering of adjectives in Northern Sotho, perhaps even more so than in English. These factors suggest that, as in English, the position of an adjective within a modification string in Northern Sotho is based on factors of morphology, semantics and context, and although an unmarked order can be observed for nearly any string, alternative pragmatically marked orders are also common.

8. The Adjective Class in Welsh

8.0 Introduction

In this chapter, I consider the order of attributive adjectives in the Celtic language Welsh. Welsh adjectives are typically postnominal and exhibit morphological variation depending on the gender and number of the head. Welsh is a particularly interesting language in the context of the present study; Borsley et al (2012: 154) suggest that 'the order of postnominal adjectives within the [Welsh] noun phrase is relevant for the question of how postnominal adjectives are analysed in different languages'. In 8.1, I provide some socio-historical background on the Welsh language, considering its historical relationship with English as well as the context of its nature as a VSO language. In 8.2, I offer a morphosyntactic description of the adjective class in Welsh and consider the work which has already been done on adjective order in the language. In 8.3, I provide a discussion of polyadjectival nominal phrases in natural existing language in the form of the CEG Corpus and my own micro-corpus based on bilingual National Trust leaflets. In 8.4, I present and analyse the data I obtained from my original questionnaire and in 8.5, I provide a summary of my findings and conclusions.

8.1 The Welsh Language

Welsh is a Celtic language belonging to the Brythonic branch of the Insular Celtic family (Ethnologue 2014). The relationship between English and Welsh and the level of bilingualism in the country is particularly relevant to the ordering of adjectives, with the two languages showing considerable variation in this word class. According to the 2011 Census figures, the number of Welsh speakers has decreased considerably since 1911. In the last century, the number of competent speakers of Welsh in Wales has dropped from almost a million speakers (977,000 in 1911) to just over half that total (562,000 in 2011). Welsh speakers in other countries, including Canada, the United States of America and the Patagonia region of Argentina make up only a very small percentage of the overall number of speakers of the language. Although the drop in proficient Welsh speakers over the last century is problematic, the number has in fact increased since 1981 (a low of 504,000) and 1991 (508,000). A drop of 20,000 from 2001 (582,000) suggests that the number of Welsh speakers has fluctuated a lot in the last 50 years, but remains relatively stable.

The 2011 Census figures suggest that only 19% of people living in Wales have native-like proficiency in the language (Statistics for Wales), down nearly 2% since 2001. The number of monolingual Welsh speakers has decreased over the last 100 years from around 200,000 to almost none. Despite the population having increased since 2001, the number of Welsh speakers went down due to 'demographic changes in the population (including fewer children, more adults and the loss of older

cohorts with higher levels of Welsh speakers), the outmigration of Welsh speakers, the in-migration of non-Welsh speakers and changes to people's skills between Censuses' (Statistics for Wales). The changes in the number of Welsh speakers across different demographics in the last 100 years are reflected in the tables in *Figures 8.1* and *8.2:*

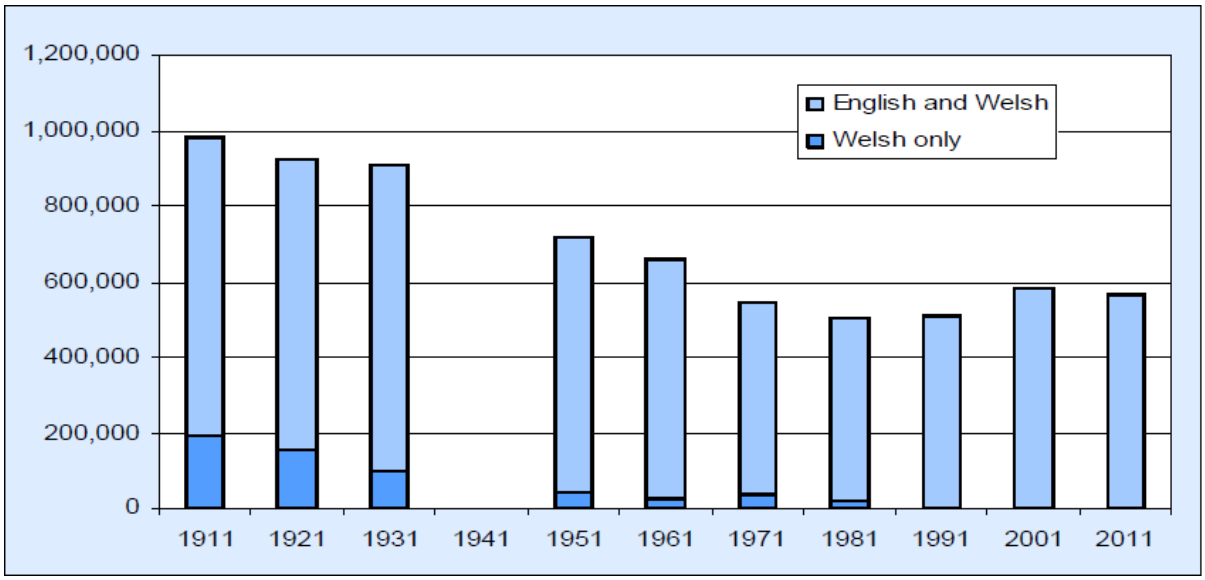


Figure 8.1: Welsh Speakers Aged 3 and Over 1911-2011

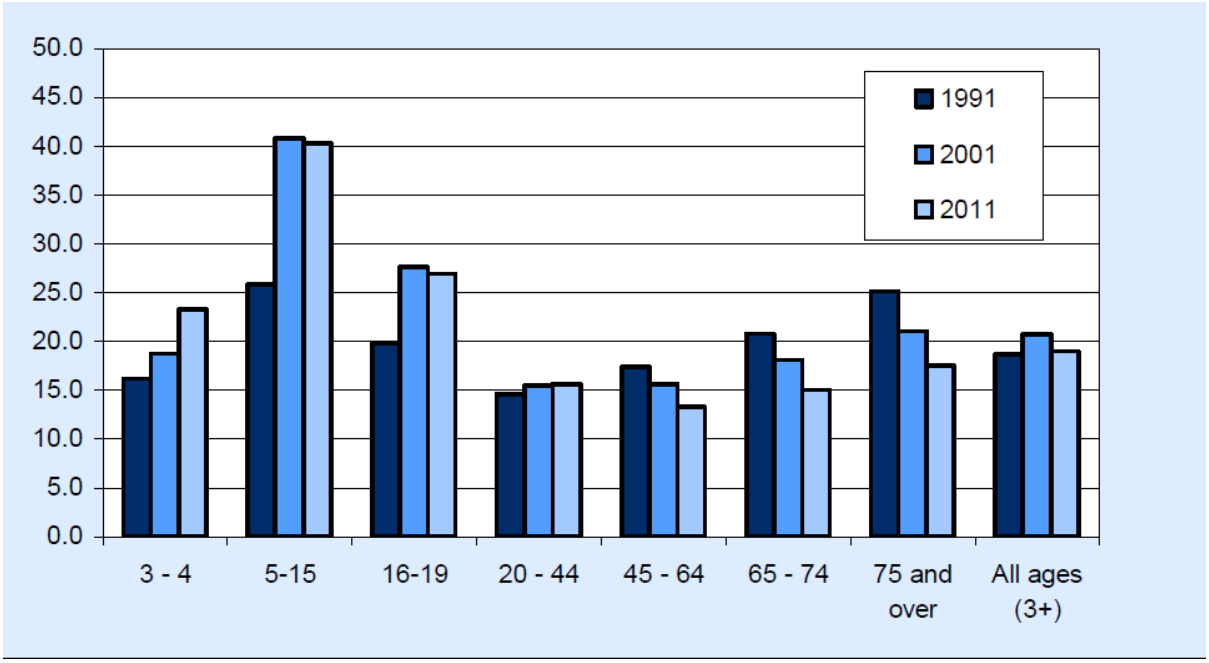


Figure 8.2: Welsh Speakers by Age Group 1991-2011

Despite the long relationship between Welsh and English, the language has always been strong despite the influence of its powerful neighbour. Although the number of Welsh speakers has

decreased in the last century, Welsh is considered to command as high a status today as it ever has done. Awbery (1987: 2) remarks that it is somewhat ironic that 'the use of Welsh in many official contexts has now been widely conceded, and the language has a higher profile today, perhaps, than it ever had when it was numerically in the ascendant'. Since Awbery's remarks, which followed the passing of the Welsh Language Act in 1967, giving Welsh equal status, the formation of the Welsh Assembly in 1999 and the continuing development of Welsh education programmes have only added to the strength of the Welsh language moving forward (Thorne 2010, NiR). The impact of this can be seen in *Figure 8.2,* which shows that in all age groups below the age of 20, the number of Welsh speakers is considerably higher than it was 20 years ago. A renewed and consistent pride in the language suggests that its future remains strong. Jones (2010: xii) explains that 'Welsh has a rich cultural heritage and is the oldest surviving language in Britain, with a history and a literature extending over 15 centuries', while The National Assembly for Wales (2000) observes that 'the Welsh language is part of the social and cultural fabric of Wales'.

The role of bilingualism and dialectal variation in Wales has to be considered when researching the language with native speakers. Russell (1995: 139) suggests that 'there is no doubt that the main dialect distinction is between North and South Wales, but within these areas finer distinctions can be drawn'. Russell does, however, suggest that much of the distinction is lexical in nature, and it is unlikely that adjective order will be affected. However, Davies (2008) suggests that 'as a result of English being an additional language for Welsh speakers, it is likely that this intense contact will result in change to the Welsh language, e.g. structurally'. Davies' work is based on codeswitching and focuses on the relative position of adjective and noun rather than the order among adjectives in a modification string. The impact of bilingualism on adjective order is further disputed by Lindsay (1993) who observes the functional separation of languages in Bangor, and Deuchar (2005: 260) who recognises the low level of code-switching possible due to the equivalency constraint developed and applied to adjectives by Myers-Scotton (2002: 132).

The dominant constituent order in Welsh is VERB-SUBJECT-OBJECT, which Roberts (2005) relates to N-raising analyses of constituent order in noun phrases. Roberts' analysis is disputed by among others, Willis (2006) and is discussed in more detail in Chapter 2. Greenberg (1963) suggests that 'with overwhelmingly more than chance frequency, languages with dominant VSO order have the adjective after the noun'. Dryer (1992) disputes this, and his co-edited database *The World Atlas of Language Structures (WALS)* supports his observations. On WALS, 61 out of the 89 languages with a VSO structure have postnominal adjectives, representing 69% of the sample. This seems to reflect Greenberg's observation, but the figure is slightly lower than the 79% of SVO languages (342/435)

which exhibit the same N-ADJ order. In all the 1366 languages on the database which are analysed for adjective order, 878 (64%) are N-ADJ, regardless of constituent order. This suggests that any link between a constituent order of VSO and adjectives appearing in postnominal order is more circumstantial than salient.

8.2 **Morphosyntax and Poly-adjectival Nominal Phrases**

8.2.1 The morphosyntactic behaviour of Welsh adjectives

8.2.1.1 The position of adjective and noun

Adjectives in Welsh are typically postnominal and have a range of interesting morphological properties. Adjectives can appear before the noun in some situations, plural and gender inflections exist but are now somewhat archaic in the majority of cases and mutations occur under certain conditions. In this section, I provide a description of the Welsh adjective and in *8.2.2.,* I consider the work which has already been done on the order in which adjectives appear in Welsh PNPs. Borsley et al (2012: 152) suggest that the basic order of constituents in the Welsh noun phrase is as follows:

Determiner-Numeral-Noun-**Adjective**-Possessor/Demonstrative-Complement-Relative Clause

This suggests that, as noted by all the major grammars of the language, adjectives in Welsh usually appear after the noun (Brown 1976; Thomas 1992; King 2003; Roberts 2005; Rowland 1876; Jones 2010; Thorne 1993; Williams 1980). Adjectives and noun modifiers occur directly after the noun, without any kind of 'linking particle' such as the qualificative particle in Northern Sotho or the descriptive indicator in Chinese (example from my *NTMC*, see *Chapter 3*):

145. *clogwyni* *calchfaen* *trawiadol*
N-cliffs N-limestone ADJ-spectacular
'spectacular limestone cliffs'

King (2003: 70) notes that 'although the vast majority of Welsh adjectives come after the noun they are describing, there are a few which always come before, and some that are found in both positions, just as in French'. It is quite common that languages with a dominant order of adjective and noun also have a small subclass of adjectives which appear in the non-normative position (Dryer et al 2013, see Chapter 2 for a discussion of this). The number of adjectives which commonly appear before the noun in unmarked order is 'very restricted' (Roberts 2005: 91), and the major works on the language offer somewhat different lists, which are summarised in *Table 8.1:*

Welsh	English	King	Borsley	Thorne	Brown	Roberts	Jones
Ambell	*Occasional*	✓		✓	✓		✓
Annwyl	*Dear*						
Amryw	*Several*						✓
Cam	*Wrong*			✓			
Cyn-	*Ex-*	✓			✓	✓	
Cryn	*Considerable*	✓		✓			✓
Dewis	*Chosen*		✓				
Dirprwy-	*Deputy*	✓	✓				
Diweddar	*Late (dead)*		✓				
Gau	*False*			✓			
Gwir	*True, genuine*		✓	✓			
Hen	*Old*	✓	✓	✓	✓	✓	✓
Hoff	*Favourite*		✓		✓		✓
Holl	*All*	✓		✓	✓	✓	✓
Mân	*Minor*		✓				
*Peth**	*A little*				✓		✓
*Pob**	*Every*	✓			✓		✓
Prif	*Main*	✓	✓		✓		✓
Priod	*Proper*			✓			
*Rhai**	*A few*				✓		✓
*Sawl**	*Several*				✓		✓
Unig	*Only*	✓	✓	✓	✓	✓	✓
Y fath	*Such*				✓		✓
Ychydif	*Few*			✓			✓

*- adjective does not cause mutation in subsequent head.

Table 8.1: Prenominal Adjectives in Welsh

Thomas (2008: 289) also notes that *annwyl* 'dear' also often precedes the noun, usually modifying *gyfaill* 'friend', while Thorne (1993: 135) suggests that certain plural adjectives can precede the noun in phrases such as *uchelion fannau* 'high places', *dirgelion leoedd* 'secret places' and *cyfrinion bethau* 'mystic things'. *Hen* and *unig* are the only adjectives which all the referenced sources recognise as being prenominal. *Unig* 'only' is one of a small number of adjectives in Welsh which can both follow and precede the noun, with 'lexicalised contrast' (Watkins 2002: 331) depending on which position it occupies. When following the noun, *unig* means 'lonely' and takes on a more descriptive meaning than its more specifying prenominal equivalent; (146) is classic example from Roberts 2005: 91, Borsley et al 2012: 179 and King 2003: 72:

146. a. *yr* *unig* *blentyn*
ART-the ADJ-only N-child
'the only child'

b. *y* *plentyn* *unig*
ART-the N-child ADJ-only
'the lonely child'

Jones (2010: 36) offers a list of adjectives which behave similarly to *unig*, and these are exemplified in the table in *Table 8.2* below:

Adjective	Prenominal	Postnominal
Gwahanol	Various	Different
Gwir	Genuine	True
Hen	Old	Ancient
Mân	Minor	Small
Prin	Scarcely	Rare
Unig	Only	Lonely
Union	Exact	Straight

Table 8.2: Adjectives with Semantic Contrast in Pre- and Post-nominal Position

Many of the adjectives in the table above have similar properties to their equivalents in French, with *vrai* 'true', *ancien* 'old', *seul* 'only' and *different/divers* 'various' exhibiting exactly the same semantic variations when used before and after the noun respectively (Byrne & Churchill 1993: 108). In each case, the prenominal, or non-normative ordering of adjective and noun results in the adjective taking on a less descriptive and more specifying function. Roberts (1996: 91) notes that adjectives such as *unig* in prenominal position have a more 'quantificational interpretation' and that they 'can arguably be treated along the lines of prefixes like *cyn-*, 'former/ex', that is, as elements adjoined to N'.

Thomas (2008: 288) refers to many of the adjectives in *Table 8.1* as 'enumerators', while King (2003: 79) uses the term 'quantitative adjectives' for the same semantic subgroup. Sadler (2000: 74) suggests that prenominal adjectives should be 'assumed to adjoin to NumP rather than NP'. These terms include *rhai* 'some' and *sawl* 'several' and occupy the fuzzy borderline between determiner

and modifier. They fit into Bache's (1978) 'Mod-I' category of specifying adjectives and are similar to quantifiers in Chinese, in which 'quantifiers always precede qualifiers' (Po-Ching & Rimmington 2004: 59, see *Chapter 9* for more on this).

The properties of prenominal adjectives in Welsh are similar to those of Mod-I specifying adjectives in English (Bache 1978). Sadler and Mittendorf (2008: 385) suggest that adjectives commonly appearing before the noun 'are in general non-gradable, occur in a fixed order, and are not modifiable by adverbial intensifiers such as *rhy* 'too' or *iawn* 'very''. One particular exception to this pattern is *hen* 'old', which can occur in graded or intensified forms. However, when this is the case, the adjective can only appear in postnominal position and cannot precede the noun when accompanied by an intensifier or when bearing a morpheme indicating comparison (Watkins 2002: 331). This supports the notion that adjectives appearing in prenominal position have a less descriptive and more specifying or enumerative function.

King (2003: 71) notes that prenominal and postnominal adjectives commonly co-occur in their respective positions:

147. *hen* *dŷ* *gwag*
ADJ-old N-house ADJ-empty
'An empty old house'

148. *pob* *iaith* *Geltaidd*
ADJ-every N-language ADJ-Celtic
'every Celtic language'

Evans (1970: 37) suggests that in Middle Welsh, adjectives could quite commonly precede the noun, and that many postnominal adjectives in Modern Welsh were in fact typically prenominal several centuries ago. Borsley et al (2012: 179) recognise poetic prenominal usages as a relic of this phenomenon, suggesting that 'in high literary Welsh, more or less any adjective can precede the noun. Even in moderately literary Welsh, comparative and superlative adjectives often precede'. However, Thorne (1993: 26) suggests that this is a strictly marked order and is purely 'a literary device'. Just as in English poetry, adjectives may occur postnominally; this does not reflect the usual order of adjective and noun in natural language.

8.2.1.2 Welsh adjectival morphology

The most notable morphological property of Welsh adjectives is that they take a soft mutation when following feminine singular nouns. Although feminine and plural forms of adjectives do exist, these are archaic or poetic in most cases, and are restricted to a small number of adjectives which regularly exhibit these forms. Many Welsh adjectives are gradable and the morphosyntactic structure of graded forms is similar to English in that there is a synthetic and a phrasal form for both the comparative and superlative. The criteria on which these respective forms are used are dependent, as in English, upon the number of syllables in the word. Adjectives can be derived from other word classes, including modifiers which are similar to participial adjectives in English.

Watkins (2002: 304) describes mutation in Welsh as 'morphologically, syntactically and lexically conditioned sound alternations'. Watkins suggests that these mutations were originally triggered purely by phonetic features similar to the <n> affixed to the indefinite article in English. Over time, however, this has been the subject of change and mutations now occur in a variety of syntactic environments. There are three principle forms of mutation in Welsh: soft, nasal and aspirate. Comprehensive accounts of the characteristics and conditions of each are provided, among others, by Watkins (2002), King (2003) and Thorne (1993).

King (2003: 13) describes the Welsh mutation system as 'one of the most complex found in any of the living Celtic languages'. In Welsh noun phrases, the head noun takes a soft mutation when it is of feminine gender and is preceded by either the definite article *y(r)* or a prenominal adjective such as *hen* 'old'. Postnominal adjectives take soft mutation only when they follow a feminine singular noun. Plural nouns and masculine singular nouns do not typically cause mutation on modifying adjectives (King 2003: 74). Mutation affects the first letter/phoneme of the word only, and does not affect vowels. Not all consonants mutate, but a comprehensive table of mutations is provided by King (2003: 14):

Consonant	Soft	Aspirate	Nasal
c	g	ch	ngh
p	b	ph	mh
t	d	th	nh
g	Ø	-	ng
b	f	-	m
d	dd	-	n
ll	l	-	-
m	f	(mh)	-
rh	r	-	-
n	-	(nh)	-

Brackets indicate non-standard (spoken only) form

Table 8.3: Welsh Mutations.

This means that in the following example (Borsley et al 2012: 177), the adjectives *mawr* 'big' and *preifat* 'private' take soft mutation due to the influence of the modified head noun *gardd* 'garden':

149. *gardd* *fawr* *breifat*
N-garden ADJ-big ADJ-private
'a big private garden'

Whether or not this can be considered as expressing a grammatical relationship between head and modifiers is debatable. While these mutations are inevitably triggered by the feminine singular nature of the head, if an element is placed between them such as the conjunction *a* 'and' or the intensifier *eithaf* 'quite', the adjective which follows does not mutate in concord with the noun (Borsley et al: *Ibid*). The authors note that 'a local mutation takes precedence over a more distant one'. In equivalent structures in a language which expresses grammatical concord on adjectives (e.g. French) adjectives in such 'broken sequences' (Bache 1978) retain their concordial inflection.

Although many adjectives have feminine and plural forms, Thomas (2008: 298) suggests that 'agreement of feminine noun and formally-marked feminine adjectival form is increasingly rare' and

notes that concordial forms are 'restricted to a very small number of adjectival forms'. These adjectives include *gwyn/gwen* 'white', *crwn/cron* 'round' and *bychan/bechan '*small'. Thomas also notes that numerical concord is falling out of usage. Borsley et al (2012: 178) suggest that 'in most cases, adjective agreement is optional and the general form may also be used'. They note that, while many of these forms are 'rare, formal or restricted to fossilized expressions', some adjectives such as *bychan* and *arall* 'other' (plural *eraill*) have 'more or less compulsory' distinct forms. King (2003: 73) lists eight adjectives which retain the gender distinction in normal speech, noting that plural forms are 'more commonly found on their own than with a noun' and are 'to all intents and purposes confined to set phrases' such as:

150. *mwyar* *du-on*
N-berries ADJ-black-PL
'blackberries'

King echoes Borsley et al in citing *arall* as an adjective with an obligatory plural form, while *ifanc/ifainc* 'young' is another adjective which commonly inflects to express concord with plural heads (Jones 2010: 38; Brown 1976: 13).

Just as in English, Welsh has ways of forming adjectives from verbal forms. Thomas (2008: 290) notes that 'there is a construction derived from a passive relative clause and introduced by the perfective particle *wedi* which has the force of a passive participle'. The author gives the example:

151. *gwaith* *wedi* *ei* *orffen*
N-work PERF PRON-3SING V-finish
'finished work',

There are, however, other morphological adjectives which also suggest a past participial adjective; these include *cloiedig* 'locked' and *clwyfedig* 'wounded' and often end in <edig>. Thomas (*Ibid*) also notes that there is a similar adjectival construction 'derived from an active relative clause with the force of a present participle, introduced by the progressive particle *yn*'. The example the author offers is:

152. *merch* *yn* *crio*
N-girl PROG V-cry
'a crying girl'

Similarly, there are more 'adjectival' participles such as *diflas* 'boring', *llachar* 'dazzling' and *bygythiol* 'threatening', which do not require the particle. This distinction supports the observations of Huddleston (1988: 114) and Laskova (2007: 125) who separate 'real verbal participles' from what Laskova refers to as 'adjectival participles' (see *Chapter 2* for more on this).

Thorne (1993: 136) notes that 'there are four degrees of comparison in Welsh. They are: equative, absolutive, comparative and superlative'. Lewis (2005: viii) explains that, as in English, 'there are two methods of comparing adjectives' and adjectives with two or more syllables are often compared only through the compound form (King 2003: 75). The absolutive constitutes the root form to which inflections are added to create the other three graded forms:

Absolutive	Equative	Comparative	Superlative
Cryf	*Cryfed*	*Cryfach*	*Cryfaf*
'Strong'	'Equally strong'	'Stronger'	'Strongest'
Llawn	*Llawned*	*Llawnach*	*Llawnaf*
'Full'	'Equally full'	'Fuller'	'Fullest'
Ysgafn	*Ysgafned*	*Ysgafnach*	*Ysgafnaf*
'Light'	'Equally light'	'Lighter'	'Lightest'
Gwyntog	*Mor wyntog*	*Mwy gwyntog*	*Mwyaf gwyntog*
'Windy'	'Equally windy'	'More windy/windier'	'Most windy/windiest'

Table 8.4: Graded Adjectives in Welsh (adapted from Thorne 1993: 137)

8.2.2 The Order of Attributive Adjectives in Welsh

While the phenomenon of adjective order has been examined considerably less in Welsh than in English, it has been researched considerably more than in most other languages. Cinque (2004) offers the syntax of Welsh polyadjectival nominal phrases as evidence for the validity of N-raising analyses of noun phrase structure, while Willis (2006) argues against this analysis. A number of authors have commented on the order of Welsh adjectives in a string and in this section, I will provide a summary and overview of the presented ideas.

Watkins (2002: 331) suggests that 'lineal order in adjectival strings is not as rigid [in Welsh] as in English: both *diwrnod oer gwlyb* 'a cold wet day' and *diwrnod gwlyb oer* 'a wet cold day' are permissible.' Watkins goes on to propose a rough semantic order of *size > colour > other*, and offers the following examples:

153. *esgidiau bach coch newydd*
N-boots ADJ- little ADJ- red ADJ-new
'new little red boots'

154. *sgarff fawr ddu a gwyn gynnes*
N-scarf ADJ-big ADJ-black and white ADJ-warm
'a big warm black and white scarf'

King (2003: 69), however, suggests that the order of adjectives in Welsh is relatively uniform, observing that 'sequences of adjectives usually appear in the reverse order to English'. The example King offers is *a big red bus*, which translates into Welsh with the adjectives in the opposite order: *bws coch mawr.* This ordering contrasts with Watkins' (2002) suggestion of the order of size and colour terms, and is revisited later in this chapter. A cursory observation might suggest that King's example does not represent a normative ordering of adjectives as the notion of a 'red bus' can be said to constitute a 'fixed idiomatic collocation' (Dixon 1982: 24).

While Thorne (1993) does not discuss adjective order explicitly, his examples also suggest that King's analysis may be incomplete and that the order of adjectives is more variable than simply being a mirror-image of that in English. The following examples (from Thorne 1993: 133-4) show that multiple adjectives in Welsh can appear in the same order as in English:

155. *pentref bach prydferth diarffordd Llanfihangel-y-pwll*
N-village ADJ-small ADJ-pretty ADJ-remote N-Llanfihangel-y-pwll
'the small, pretty, remote village of Llanfihangel-y-pwll'

156. *edrychiad hir ceryddol du*
N-look ADJ-long ADJ-chastening ADJ-black
'a long chastening black look'

157. *merch fer dywyll*
N-girl short dark
'a short dark girl'

158. *hen dŷ mawr digalon*
ADJ-old N-house ADJ-big ADJ-sad
'a big old sad house'

Borsley et al (2012: 195) support this observation, suggesting that 'adjective ordering turns out to be a quite complex phenomenon not amenable to simple generalisation'. The authors note that, while King's (2003) suggestion that adjective order is usually the reverse to English is not inaccurate, there are also many orders such as those suggested by Thorne (1993) above in which the order is similar to the English equivalent. The authors discuss adjective ordering in Welsh in the context of N-raising analyses and explain the phenomenon thus:

> 'Postnominal languages are sometimes divided up into those where the relative order of adjectives is the same as that found in English, and those where it is the mirror image of English (Cinque 1994: 99-100, Fassi Fehri 1999: 107-9, Longobardi 2001: 576). […] Welsh does not easily fit into a typology that recognises only these two types, and both orders are found in different environments.' (Borsley et al 2012: 154)

Cinque (2008) claims that 'this mixture of direct and mirror-image orders of nominal modifiers can be reconciled with a unique, universal base structure' for adjective orderings. Both Willis (2006: 8) and Sadler (2000: 79) agree that Welsh does not satisfy such N-raising analyses of noun phrase structure, in which head movement and phrasal movement are suggested as explanations for the cross-linguistic variation in adjective ordering within a Universal Grammar (Chomsky 1965, 2004) framework. In suggesting that both mirror-image and equivalent orders to English are common in Welsh, Willis (2006: 9) explains that 'things are not so straightforward [and] adjective ordering in fact raises a series of problems'. Rouveret's (1994: 213) classic example of how Welsh adjectives are said to appear in an equivalent order to that of their English equivalents is cited by Borsley et al (2012: 154) and also by Willis (2006: 1):

159. *cwpan mawr gwyrdd Tsieineaidd*
N-cup ADJ-big ADJ-green ADJ-Chinese
'a big green Chinese cup'

However, isolated examples such as those in 159, 160 and 161 show only possibility of use, not probability. Willis (2006: 8) suggests that the perception that Welsh and English adjective orders are equivalents comes from Rouveret's translation of *y ferch fach dawel hon* as 'this little well-behaved girl'. This is a reversible PNP (Bache 1978) in English, in which adjectives can appear in either order, and *this well-behaved little girl* would be equally acceptable. Willis (2006: 9) offers numerous examples from the *CEG Corpus* (see *7.3*) which show the reverse, mirror-image order of Welsh adjectives in a string:

160. *acen* *Saesneg* *gref*
N-accent *ADJ-English* *ADJstrong*
'a strong English accent'

161. *ryg* *Twrcaidd* *coch*
N-rug *ADJ-Turkish* *ADJ-red*
'a red Turkish rug'

Interestingly, these two examples feature adjectives with different functions. In line with Bache's (1978) typology of adjectives, nationality terms are Mod-III and *gref* and *coch* Mod-II adjectives. Most of the examples (with the exception of the previous example on this page) given of adjective orders which are the same as that of English involve adjectives from the same modification zone, usually strings of Mod-II adjectives. One aspect I investigate in this chapter is the conditions under which equivalent and mirror-image orders exist in Welsh adjective strings. In particular, I consider whether equivalent orders typically appear in strings of Mod-II adjectives while mirror-image orders are restricted to strings featuring adjectives from different modification zones.

Borsley et al (2012: 180) suggest that 'although there is some degree of flexibility in the relative order of postnominal adjectives, some rules and tendencies can be noted'. The most compulsory rules proposed by the authors are that *arall* 'other' typically follows all other adjectives, unless there is a graded adjective, which always appears at the end of a string. The only other adjective which the authors suggest can follow a superlative adjective is *posib*, which can appear at the end of a string with a restrictive function. Cinque (2010: 3) examines this same function in Germanic and Romance languages (see *Chapter 2* for a more detailed discussion of this). The following example of this structure is adapted from Borsley et al (2012: 181):

162. *y* *brics* *coch* *mwyaf* *posib*
ART-the *N-bricks* *ADJred* *ADJ-biggest* *ADJ-possible*
'the biggest possible red bricks'

Borsley et al (2012: 180-1) provide the most detailed discussion of adjective order in Welsh and suggest that the order of both prenominal and postnominal adjectives is relatively uniform, with the order of prenominal adjectives 'fairly fixed':

gwir/diweddar	*prif*	*hoff*	*cas/mân*	*hen*	*uchel*	*HEAD*
true/deceased	main	favourite	nasty/minor	old	high	HEAD

Thomas (1996: 318) provides the most extensive analysis of postnominal adjective order in Welsh and suggests that adjectives appear in the following unmarked order:

NOUN > NON-GRADABLE > SIZE > COLOUR > PROVENANCE > DEVERBAL > AGE > QUALITY > *arall*

Borsley et al (2012: 181) compare this ordering to Sproat and Shih's (1991: 565) equivalent order for English and note that the most significant difference between the two is that adjectives denoting 'age' and (subjective) 'quality' appear significantly earlier in English than in Welsh. While *arall* 'other' typically appears in string-final position, its equivalent in English always appears at the head of a prenominal string. The equivalent in Northern Sotho (*-ngwe*) appears closest to the noun in string-initial position (see Chapter 7 for more details on this). Although words for *other* seem to occupy contrasting positions in the studied languages, each version of the word appears typically at one extreme or other of a string. This suggests that these words modify the entire phrase together, rather than operating in coordination with other adjectives.

Borsley et al (2012: 186) also remark that 'attributive noun phrases precede adjectives' and Sadler (2000: 74) notes that possessors follow adjectives as long as the adjective is modifying the head noun and not the possessor. This pattern suggests an analysis of complex PNPs which allows for the recognition of 'discernible secondary structures' (Muir 1972: 30, see *Chapter 2* for more on this) such as the following (adapted from Borsley et al 2012: 186):

163. *siop* *lyfrau* *fawr* *arall* *Mair*
N-shop *N-book* *ADJ-big* *ADJ-other* *N-Mair*
'Mair's other big book shop'

This analysis demonstrates how the unmarked order in Welsh is most logically described as being a mirror-image of English order, though once again, this is a PNP which contains four modifiers with different modification functions: *lyfrau* classifies, *fawr* describes, *arall* specifies and *Mair* indicates possession. It seems that when modifiers have distinct functions, they appear within a string in the reverse order noted by King (2003), but when strings feature modifiers with the same function, they appear in a more semantic-based order such as that proposed by Thomas (1996), Willis (2006) and Borsley et al (2012). These ideas will be addressed in detail in *8.3* and 8.4 when I discuss my data set.

8.3 Corpus Data

My corpus data analysis is divided into two sections. First, I provide data from a micro-corpus of 125 PNPs from a selection of 26 tourist information leaflets. All of these leaflets are published by the National Trust and feature English and Welsh versions of the same text. Although this is a relatively small number of tokens, it provides a good basic indication of the kind of patterns which occur in Welsh noun phrases which include more than one adjective. Of the 125 noun phrases in the data set, 102 include just two adjectives, while 23 have three or more. In the noun phrases with two adjectives, it is possible to observe the number and kind of modifier combinations which appear in the same order or in mirror-image order to their English equivalents. In more complex noun phrases, adjectives often occur in a combination of these two possible orders and analysis of the trends displayed is provided in 8.3.1 below.

8.3.1 Analysis of NTMC Data

Of the 102 bi-adjectival noun phrases in the data set, 86 feature adjectives appearing in a mirror-image order of their English equivalents, while 12 appear in the same order as in English. The remaining four phrases include both a prenominal and a postnominal adjective, but in each case, these adjectives appear in the same linear order as in English. Examples of each of these structures are illustrated below. Overall, in 84% of tokens which include two modifiers, those modifiers appear in the reverse order to the equivalent structure in English:

163. *traethau* *tywodlyd* *bendigedig*
N-beaches ADJ-sandy ADJ-wonderful
'wonderful sandy beaches' (MIRROR ORDER)

164. *lliwiau* *llachar* *gwreddiol*
N-colours ADJ-vivid ADJ-original
'vivid original colours' (SAME ORDER)

165. *yr* *hen* *air* *Cymraeg*
ART-the ADJ-old N-word ADJ-Welsh
'the old Welsh word' (SAME ORDER- pre- and post-nominal adjectives)

The first example above shows adjectives appearing in the reverse order to their English translation. In this example, the adjectives are from different functional classes (Bache 1978) in that *wonderful* is a Mod-II descriptive adjective, while *sandy* is more appropriately described as a Mod-III denominal adjective. More than half (44) of mirror-image orders in bi-adjectival nominal phrases feature combinations of adjectives from different functional classes. There are only four tokens in the corpus which include two central, underived adjectives. Of these tokens, two appear in the same order as in English, while the other two appear in mirror-image order, suggesting some variation in semantic ordering between the two languages. One of the two noun phrases which appear in mirror order is:

166. *gwartheg* *duon* *Cymreig*
N-cattle ADJ-black-PL ADJ-Welsh
'Welsh black cattle'

A probable explanation for this ordering is that the combination of *Welsh* and *black* is a fossilised collocation which refers to a particular breed of cattle, an explanation supported by the archaic form of the Welsh colour term. The order among Mod-II adjectives in English is that adjectives of colour typically precede adjectives of nationality (see Bache 1978, Dixon 1982 among others) with this pattern also present in the Welsh version of this phrase.

With 85% of two-modifier phrases appearing in mirror-image order, this supports King's (2003: 69) suggestion that this is the normative order for most adjective strings. It is interesting, therefore, to consider the kind of sequence in which adjectives follow the same linear pattern as in English. Of the 16 adjective strings which appear in the same order as those in English, 5 have a noun modifier which functions as a possessor in the Welsh translation, while 2 have noun modifiers which translate as prepositional phrases. Four have pre- and postnominal adjectives, three have adjectives with an adverbial or intensifying relationship, and two are made up of a pairs of Mod-II adjectives (Bache 1978). The range of collocation patters in same-order Welsh PNPs is exemplified in *Table 8.5* below:

Pattern	Welsh	English
Adverbial Relation	*safon uchaf posib* *castell hynod gadarn*	*highest possible standards* *a mighty secure castle*
Pair of Mod-II Adjectives	*paneli lliwgar dwyieithog* *lliwiau llachar gwreddiol*	*illustrated bilingual panels* *vivid original colours*
Noun Modifier as Possessor	*taith arswydus o gwmpas y Mwynglawdd* *y casgliad gorau o gelfyddyd*	*spooky mine tour* *finest art collection*
NM as PP	*mawredd cyferbyniol i fyny'r grisiau*	*contrasting upstairs grandeur*
Prenominals	*hen stad fawreddog*	*former grand estate*

Table 8.5: Welsh Bi-adjectival NPs with the Same Linear Order as English

It would appear from a consideration of the patterns demonstrated in noun phrases with just two modifiers, that the most common order of Welsh adjectives is the reverse of that in English. This is particularly the case in PNPs with adjectives with different functions, and exceptions often feature periphrastic expressions in Welsh, or more than one Mod-II adjective in sequence. Expressions which are noun modifiers in English sometimes function as head of a possessor phrase or are paraphrased as a prepositional phrase. Examples of this in the data are *upstairs*, which is a prepositional phrase here, and *sit-down meal*, which is translated as *bwyd o gwmpas y bwrdd* 'meal around the table'. As possessors and prepositional phrases follow adjectives in Welsh (Borsley et al 2012: 184), they occupy the equivalent position as Mod-III adjectives in English and hence lead to sequences which have the same linear order as their English counterparts.

Welsh noun phrases with three or more adjectives in the *NTMC* data never appear in exactly the same order as their English equivalents. 35% of these tokens have an exact mirror-image order, while 65% have a more complex order which is neither mirror-image nor the same as English. This variation from the statistics for PNPs with two modifiers is largely due to 'discernible secondary structures' (Muir 1972: 30) within modification strings and often due to possessives and periphrastic constructions featuring relative clauses and prepositional phrases. Again, these always follow adjective strings in Welsh, but in English often function in Mod-III position as noun modifiers or participial adjectives. The examples below illustrate mirror-image orders in strings of more than two adjectives in the NTMC:

166. *rhaglen* *adeiladu* *fawr* *Edward I*
N-programme N-building ADJ-big N-Edward I
'Edward I's massive building programme'

167. *llwybrau* *cerdded* *cylchol* *byr*
N-routes N-walking ADJ-circular ADJ-short
'short circular walking routes'

168. *gwaith* *tun* *Fictoraidd* *bywiog*
Nworks Ntin ADJ-Victorian ADJ-bustling
'bustling Victorian tin-works'

These phrases all include adjectives with differing functional properties. In the first example, there is a possessive (*Edward I*), a central Mod-II adjective (*fawr*) and a noun modifier (*adeiladu*). In phrases which contain multiple Mod-III adjectives in a string, Bache's (1978) principle of classification is observed, just as in English, but in exact mirror-image order. Consider the following example:

169. *Canolfan* *Dysgu* *yr* *Awyr* *Agored* *Stagbwll*
N-centre N-learning [the air open] N-Stackpole
'Stackpole Outdoor Learning Centre'

Just as in English, the Mod-III adjectives in this example classify the head with the level of classification being greater as distance from the head increases. As adjectives are post-nominal in Welsh, the reverse order to English is observed. There are, however, less uniform orders present in the *NTMC*, with modification strings becoming increasingly complex with each additional modifier. The following examples show how the ordering of sub-modification is different between the two languages:

170. *gardd* *furiog* *hyfryd* *Fictoraidd*
N-garden ADJ-walled ADJ-delightful *ADJ*-Victorian
'delightful Victorian walled garden'

In this example, *furiog* 'walled' occupies a fairly rigid position in the Mod-III slot in that it classifies the head, while the other two adjectives are both descriptive Mod-II adjectives and appear in the

same order as in the English version of the same phrase (subjective quality judgement preceding provenance). While the adjective *Victorian* has a more classifying Mod-III function in English, in this Welsh phrase it is more descriptive in nature, as exemplified by its placement after the inherent Mod-II adjective *hyfryd* 'delightful'. As *hyfryd* appears closer to the head than might be expected, this could be considered a foregrounding technique, placing greater emphasis on the quality of the garden than on its Victorian nature, and suggesting a relative variable order for these two elements.

171. *Ystad weithredol draddodiadol hon yn Swydd Henffordd*
N-Estate ADJ-working ADJ-traditional DET-this PREP-in N-county N-Hereford
'This traditional Herefordshire working estate'

A similar pattern can be observed in (171), with *weithredol* 'working' operating as a Mod-III adjective and sub-classifying the head. The Mod-II adjective *draddodiadol* 'traditional' then follows in mirror-image order, before the demonstrative which is in turn followed by the noun modifier, which in Welsh functions as a prepositional phrase and hence appears in string-final position.

172. *lleoedd gwych eraill gerllaw*
N-places ADJ-great ADJ-other-PL ADJnearby
'other great nearby places'

The example in (172) is interesting in that *gwych* 'great' and *eraill* 'other' appear in mirror-image order as would be expected from their respective functions as Mod-II and Mod-I adjectives, while *gerllaw* 'nearby' makes correspondences between the two orders more complicated. As it occupies the pre-head position in the English phrase, it can be considered to be Mod-III adjective, classifying places into those which are in the local area. However, *nearby* in English can equally function in postnominal position in a reduced relative clause, in the phrase *other great places (which are) nearby*. The position of *gerllaw* in the Welsh phrase supports this analysis, as relative clauses tend to follow adjectives in Welsh (Borsley et al 2012).

173. *ystafell de'r hen dŷ ysgol newydd*
N-room N-tea ADJ-old N-house N-school ADJY-new
'new old school house tea room'

This final example in (173) looks particularly strange in English due to the collocation of the contradictory adjectives of age *old* and *new*. In the Welsh equivalent, the secondary structure of *the old school house* is more clear due to the circumfixation of its two modifiers. This phrase essentially has a mirror-image order as *the old school house* modifies the *tea room* as a complete noun phrase, rather than as three separate modifiers. However, the adjective order within this secondary noun phrase is the same as in English due to the presence of the prenominal adjective *hen*. As this order is in opposition with the general mirror-image order of the rest of the phrase, this leads to a complex overall order which is a mixture of the two.

There are additional patterns in the *NTMC* which can be noted. Superlatives typically appear at the end of strings of adjectives; the only exception to this in the 11 tokens which include superlatives is *safon uchaf bosib* 'highest possible standards'. This particular example relates to Cinque's (2010) observations on the dual functions of the adjective *possible* which can have a restrictive meaning when used in particular syntactic structures. Another interesting construction in the data is the combination of ordinal numerals with superlatives. Despite being commonly collocated in English, the prenominal nature of ordinal numerals in Welsh means that they are at opposite ends of a modification string to superlatives. In the following the example, the ordinal superlative form of *the second richest* is split up in its Welsh equivalent:

174.	*yr*	*ail*	*fynachdy*	*Sistersaidd*	*mwyaf*	*cyfoethog*
	DET-the	NUM-second	N-monastery	ADJ-Cisterian	ADJbiggest	ADJ-rich

'the second richest Cisterian monastery'

Participial-type adjectives in the data occupy a distinctive position, usually following other adjectives and only preceding other elements of modification such as relative clauses, possessives and prepositional phrases. This contrasts with Thomas' (1996) ordering in which he suggests that verbal adjectives precede those of age and quality. There are 13 morphological participial adjectives in the data, formed by adding a suffix (*-ol, -og, -ig*) to their verb stem, while the verb *dywys* 'guide' takes no inflection and functions as the participial adjective *guided*. A further two English participial adjectives (*moated, jewelled*) are noun modifiers in Welsh (*ffrâm bren lit. 'timber framed', llawn gemwaith*). Interestingly, both of these adjectives in English are members of a subset of participial adjectives which are formed from nouns (see Quirk et al 1985: 1553 for a more detailed discussion of this). These structures in Welsh are not represented by participial adjectives in the data set. The phrase *llawn gemwaith* is more accurately described as an adjectival phrase, with *llawn* 'full'

followed by a headless prepositional phrase in the form of *gemwaith* 'jewellery', although an English translation as the passive *fully jewelled* would also seem reasonable.

Five English participial adjectives in the *NTMC* are translated into Welsh using the perfective particle *wedi*, which Thomas (2008: 290) suggests 'has the force of a passive participle'. Two of these constructions modify the head noun directly, while the other three are within relative clauses. There are two additional English participial adjectives which are paraphrased in Welsh using relative clauses but without *wedi*. While English participial adjectives constitute a very productive morphological sub-class of adjectives, this seems to be considerably more restricted in Welsh, making comparative analysis of their position in a string complex. The variation in the syntactic and morphological form of participial adjectives in the data set is exemplified in *Table 8.6* below:

Pattern	Welsh	English
Suffix *–ol*	*Perfformiad gothig iasol*	*Chilling gothic performance*
Suffix *–g*	*Ystafell de drwyddedig y Bwthyn*	*Licensed Bothy tea room*
Noun modifier	*Maenordy trawiadol ffrâm bren*	*Impressive moated manor house*
Relative Clause	*Gwrychoedd yw sydd newydd gael eu tocio*	*Recently clipped yew hedges*
Wedi	*Ystafell gysurus wedi'i chynhesu*	*A comfortable heated suite*
Wedi in RC	*Amseroedd agor sydd wedi eu cyhoeddi*	*Published opening times*

Table 8.6: The Morphosyntactic Forms of Participial Adjectives in Welsh

8.3.2 CEG Corpus Data

The CEG corpus contains roughly 1 million words, of which 271,390 are nouns. 17.69% of nouns are modified by at least one adjective, with 5% of modified noun phrases including 2 or more adjectives. Of the 2348 PNPs in the corpus, only 124 (5%) contain more than two adjectives. The only noun phrase in the corpus which contains a string of four adjectives is not a natural-sounding NP and features a long list of graded antonyms. Of the 124 PNPs in my corpus which contain three adjectives, only 80 are included in my 280-PNP sample. This is because the remaining phrases generally contained intensifiers such as *iawn* 'very', *hollol* 'totally' or *pur* 'simply', which did not offer any useful insight for this investigation. It was felt that a sample of 280 PNPs would be sufficient to provide a representative analysis of the extracted data; 200 of these phrases were straightforward

postnominal adjective bigrams, with a further fifty adding a prenominal adjective, and the remaining thirty featuring an unbroken postnominal string of three adjectives.

In these 280 noun phrases, three possible ordering patterns are observable: the *same* order as English; the *reverse* order to that in English and a *different* order to that in English (i.e. one which is neither the same nor the reverse order to English). In each case, I make this judgement on what the most natural-sounding unmarked order of adjectives is in English. This is decided using a mixture of my own intuition as a native speaker, and order theories as discussed in *Chapter 4*. There is one additional ordering and this is reduplication; in four tokens in my sample, the same adjective is reduplicated with an emphatic intensifying effect. Overall, the observed orders are as follows:

Order	*Tokens*	*%*
Reverse:	188	67
Same:	77	28
Different:	10	4
Reduplication	4	1
N/A:	1	<1

Table 8.7: Ordering in Welsh PNPs in the CEG Corpus

The percentages in *Table 8.7* reflect the comments of Borsley et al (2012) and Willis (2006), who suggest that Welsh PNPs exhibit both orders which are the same as in English and those which are the reverse. King's (2003: 69) suggestion that the order of adjectives is 'relatively uniform' in that it is typically the reverse of English is not supported by these data which suggest that this is the case in only two thirds of cases. Adjectives appear in the same order as in English in more than one in four PNPs in the sample while a mixture of 'same' and 'reverse' orders is noticeable in 4% of the sample. This figure is, however, more significant in that this pattern is only possible in strings of more than two adjectives and actually represents exactly a third of all PNPs in which it is possible. In such phrases, the reverse order to English is found in 40% of tokens and the same order as English is found in 20%. These data, even without any deeper analysis, reflect Willis's (2006) suggestion that the ordering within complex modification strings is not straight-forward in Welsh.

It is possible to gain a good basic insight into the ordering in Welsh adjective strings by focussing first on adjective bigrams i.e. all PNPs with just two adjectives. Such structures can be divided into strings which feature adjectives operating in parataxis i.e. Bache's (1978) Mod-II central adjectives, and

those which operate in hypotaxis. Such a distinction can be tested by assessing how naturally a comma can be inserted into the English translation of the sentence:

175. *Nice, outdoor life* - parataxis
176. *?Other, key areas* - hypotaxis

Interestingly, combinations of two central adjectives actually have the same order as in English slightly more often than the reverse order, which only occurs in 49% of tokens. Phrases which include an adjective of size or colour exhibit the same ordering as their English translations in 69% of cases, although strings which feature an evaluative adjective usually display the reverse pattern (74%). The suggestion by Whorf (1937 [1956]) and Quirk et al (1985) that subjective adjectives precede more objective adjectives in English seems to be the reverse in Welsh, supporting a hypothesis that terms denoting subjective qualities typically appear further from the head. The following examples each feature phrases in which a Welsh evaluative adjective follows a more objective adjective:

177. *peth bach del*
N-thing ADJ-little ADJ-pretty
'pretty little thing'

178. *dyn ifanc golygus*
N-man ADJ-young ADJ-handsome
'handsome young man'

Size adjectives feature in 30 of the 78 central adjective bigrams, and appear closer to the head in 93% of tokens. The only phrases in which this is not the case are *cadeiria caled mawr* 'big hard chairs' and *rhidyll symudol anferth* 'giant mobile sieve', both of which feature adjectives which are moved closer to the head perhaps to imply a stronger classificatory strength (Warren 1984) or as the result of a strong collocation. These statistics suggest that size adjectives are strongly drawn toward the head in a parallel string of adjectives such as in the following examples:

179. *esgid fach dwt*
N-shoe ADJ-small ADJ-neat
'small neat shoe'

180. *cawr mawr du*
N-giant ADJ-big ADJ-black
'big black giant'

Willis (2006) suggests that there are regular observable patterns in Welsh modification strings, and one such pattern observable in my dataset involves the placement of colour terms. Colour terms come closer to the head than evaluatives in all but one collocations, this being *llun syml du* 'simple black photo'. This exception is perhaps the result of an adverbial relationship between the two adjectives, with *syml du* suggesting that the photograph is simple because it is black, or that it is 'simply black'. Colour terms always follow size adjectives in my sample and are sometimes followed by terms associated with colour, but denoting a more specified variety of the colour. In some cases these can be considered downtoners (as in *brown golau* 'light brown') while in others, there is a more hyponymous relationship (as in *brown cochlyd* 'reddish-brown').

Adjectives of age and nationality are not particularly common in this sample, but they do occur more commonly in my dataset as a whole. Adjectives of age are less salient in Welsh adjective strings as *hen* 'old' is usually placed before the noun, as is the case in all eight appearances in my 280-token sample. The antonym *ifanc* 'young' appears in 6 tokens, which offer fairly little insight. It precedes the evaluative adjectives *golygus* 'handsome' (see 178) and *dawnus* 'gifted', and follows the size adjective *bach* 'small' and the fixed collocation of *asgellwr chwith* 'left winger'. The contrast in the placement of *ifanc* in (181) and (182) which feature strings with similar semantic subclasses suggests that, as Watkins (2002) suggests, the order in Welsh PNPs can be more variable than it is in English.

181. *merched hardd ceidwadol ifanc*
N- women ADJ-beautiful ADJ-conservative ADJ-young
'beautiful conservative young women'

182. *ffermwyr ifanc cyhyrog Cymreig*
N-farmers ADJ-young ADJ-muscular ADJ-Welsh
'muscular young Welsh farmers'

In (182), the adjective of age precedes both the evaluative adjective and the term denoting nationality. This order is also reflected in the only other token which features a combination of adjectives relating to age and nationality, *bapur newydd cymraeg* 'a new Welsh paper'. The adjective

newydd does not fit the typical profile of an age adjective in that it has a more transferable function and meaning. In the phrases *grefydd newydd anglicanaidd* 'new Anglican religion' and *copyn newydd anedig* 'newborn spider', it forms collocations with the respective head and its position cannot be seen to denote the unmarked position of an age adjective. In the following examples from longer adjective strings, it occurs in a variety of positions:

183. *dau* *gorff* *cyhoeddus* *anadrannol* *newydd*
NUM-two N-bodies ADJ-public ADJ-non-departmental ADJ-new
'two new non-departmental public bodies'

184. *papur* *newydd* *dyddiol* *poblogaidd*
N-paper ADJ-new ADJ-daily ADJ-popular
'popular new daily paper'

185. *brigau* *bach* *newydd* *iraidd*
N-twigs ADJ-small ADJ-new ADJ-moistened
'small, new moistened twigs'

186. *dosbarth* *canol* *cymreig* *newydd*
N-class ADJ-middle ADJ-Welsh ADJ-new
'new Welsh middle class'

The above examples not only illustrate the range of positions for *newydd* but also the range of orders possible in strings of three adjectives. While some strings such as (186) are an exact mirror image of English, the previous example is in the same order as its English equivalent. The difference between these two phrases is that (185) features adjectives in stacked modification, with each adjective describing some element of the character of the head. In (186), the two adjectives closest to the head have a categorising function in that they mark out exactly which class is being denoted, while *new* provides additional information of a specifying or descriptive nature. This reverse order reflects Bache's (1978) zonal model of modification with Mod-III adjectives coming closest to the head and the level of classification increasing further from the head. *Welsh middle class* is more categorically restricted than *middle class* and so on. For my sample of Welsh PNPs, an inversion of Bache's zone-based analysis predicts the order within hypotactically related chains of modifiers in 85% of tokens such as in the following:

187. *ysgol* *gynradd* *gymraeg* *gyntaf*
N-school ADJ-primary ADJ-Welsh NUM-first
'first Welsh primary school'

188. *anghenion* *addysgol* *arbennig* *amlwg*
N-needs ADJeducational ADJ-special ADJ-obvious
'obvious special educational needs'

As Bache (1978: 78) notes, there are often exceptions to conventions which seem to govern adjective ordering and there are a number of examples in the data in which adjectives appear in an order which is less expected. One such example is *gweithdy glanwaith mecanyddol* 'hygienic mechanical workshop' in which a Mod-II adjective breaks up the expected collocation of the workshop and the Mod-III adjective 'mechanical'. While the motivation for such a non-normative order is unclear here, the most likely explanation is that *glanwaith* is moved up the phrase in order to provide emphasis or contrast. Another adjective which leads to non-normative orders is *nodweddiadol* 'typical', which tends to precede even Mod-III adjectives despite being an inherent Mod-I adjective and thus expected to appear further from the noun. Much like *former* in English, and to a lesser extent to its English equivalent *typical*, *nodweddiadol* tends to directly precede the element in the phrase which it modifies with a semi-adverbial function, thus we find the following:

189. *athrawiaethau* *nodweddiadol* *gristionogol*
N-doctrines ADJ-typical ADJ-Christian
'typical Christian doctrines'

190. *amwysedd* *nodweddiadol* *victoraidd [sic]*
N-ambiguity ADJ-typical ADJ-Victorian
'typical Victorian ambiguity'

Thomas (1996) suggests that Welsh central adjectives appear in a similar order to English, but with the notable difference that evaluatives come towards the end of a string and colour terms tend to precede adjectives denoting provenance, age and verbal qualities. This leads to a situation in which chains of central adjectives can appear in the same order as English, or in a slightly different order

depending upon whether they include an evaluative adjective. The following examples illustrate how the presence of an evaluative adjective can lead to a difference between the Welsh and English orders. The first phrase features three adjectives denoting largely objective qualities which appear in the same order as in English, while the introduction of a subjective judgement makes the second example more complex and varied:

191. *unedau* *bach* *preifat* *hunangynhaliol*
N-unit ADJ-small ADJ-private ADJ-self-contained
'small private self-contained units'

192. c*rwt* *bach* *du* *da*
N-boy ADJ-small ADJ-black ADJ-good
'a good little black boy'

An additional point of interest in the corpus data is the nature of Welsh prenominal adjectives. Of the 80 PNPs which had more than two modifiers, 50 had one in prenominal position. While a similar comparison is not really realistic in English, in which postnominal adjectives are usually poetic or archaic, it is interesting to consider where pre-posed adjectives in Welsh appear within a string of three English adjectives. As might be expected, only a small number (6%) of tokens appeared in the middle of a string, with the majority coming in string-initial position (82%) and a smaller number (12%) at the end of a string. This supports the notion that prenominal adjectives in Welsh are less descriptive than postnominal adjectives and, as Sadler (2010) suggests, have more in common with determiners. Interestingly, the nationality adjectives *ffrengig* 'French' and *sofietaidd* 'Russian' both appear in pre-head position, suggesting a bigger range in their potential placement.

As mentioned earlier, there are some PNPs in my sample in which adjective reduplication is exhibited. Although this occurs in just 1% of strings, it is a feature which merits discussion. While reduplication is widespread across languages (Katamba 1993: 180), it is not a feature which is commonly recognised in Welsh. However, the following phrases suggest that 'adjective doubling' (Kandybowicz 2007) does exist in the language, seemingly with an intensification of meaning:

193. *noson* *flaenorol* *flaenorol* *flaenorol*
N-night ADJprevious ADJ-previous ADJ-previous
'three nights earlier'

194. *da* *was* *da* *ffyddlon*
ADJ-good N-servant ADJ- good ADJ-faithful
'really good faithful servant'

194. *cyhoeddiad* *araf* *araf*
N-publication ADJ-slow ADJ-slow
'very slow publication'

195. *llinell* *enwog* *enwog*
N-line ADJ-famous ADJ-famous
'very famous line'

The data from the *CEG Corpus* support the suggestion that both reverse and mirror-image orders exist in Welsh, as well as other orders which reflect a subtly different internal organisation of elements within a modification string. The full datasets are included as an appendix. It is abundantly clear that factors of subjectivity, function and semantics are all salient in the internal structure of Welsh PNPs, which are analysed in further detail in my fieldwork, as discussed in *8.4.*

8.4 Fieldwork Data

In questionnaires with 30 L1 speakers, I was able to get some more focussed perspective on the order of elements in Welsh PNPs as well as to obtain some insights on the factors which affect this order. The first 25 questions all feature phrases containing two or (more often) three adjectives, with the final four featuring longer strings. Combinations of central adjectives were included as well as adjectives functioning in hypotaxis and 'verbal adjectives' (Thomas 1992), which were not studied in any great length in my corpus data. As discussed in *3.2.3.3*, I asked participants not only to identify what they felt was the most natural-sounding order for a string of adjectives, but also to point out which orders sounded ungrammatical. This was done with a view to shedding some light on the extent to which speakers can vary the order of modifiers in a string. With this in mind, the final question required speakers to reflect on how changing the order of the adjectives might change the meaning of the phrase as a whole.

Responses to this question were interesting and varied. Not all speakers decided to answer the question, with 23% of participants leaving this section blank. As noted in previous chapters, asking native speakers to consider more abstract questions such as this one does not always yield a

productive set of responses (Greenberg and Srinivasan 2003: 1). In this light, it was unsurprising to find occasional unclear comments such as:

'Changes the subject of the sentence- same order as Spanish?'

The interrogative nature of this response and the reference to sentential elements beyond the phrase-level suggests that this task might have been too complex for some participants. Willis (2006) notes that Welsh differs considerably from Romance languages in terms of adjective order, and this observation by my participant may have been the result of a recognition that both languages have postnominal adjectives which appear in an order distinctive from the English equivalent. However, many participants offered valuable reflections on the phenomenon of adjective order in Welsh. 33% suggested that changing the order of adjectives sometimes changes the meaning, while 27% made reference to the emphasis of the phrase depending upon the chosen order. 7% of participants suggested that longer strings of adjectives were harder to order, reflecting responses given by English participants, as discussed in *Chapter 5.*

One example of the order of adjectives affecting the meaning was offered by participant W048, who suggests that *bwrdd hir gwyn* means 'a long white table', while reversing the order of the adjectives means 'a long whiteboard'. This collocation is obviously very common to native speakers as 60% of participants placed *gwyn* 'white' in string-initial position. Participant W009 makes a similar comment about the adjective *mwyaf* which means 'bigger' in string-final position but when placed elsewhere, functions as a superlative intensifier of the following adjective, as explained by participant W001:

> *'Y bêl blastig gron felyn fwyaf* = the biggest round yellow plastic ball
>
> *Y bêl blastig gron fwyaf felyn* = the yellowest round plastic ball'

The same participant notes that the phrase *o goed* 'wooden' offers different meanings depending upon where it is positioned within the phrase, with the all subsequent modification being applied to the noun *goed* 'wood' rather than to the head *drws* 'door'.

> *'Drws newydd o goed trwm* = a new door of heavy wood
>
> *Drws o goed newydd trwm* = a door of new heavy wood
>
> *Drws trwm o goed newydd* = a heavy door of new wood'

This ambiguity of meaning is reflected in the data, with no clearly preferred order. 40% of participants selected *drws newydd trwm o goed* as the most natural-sounding order, but an

additional 37% felt that this was ungrammatical. This is most probably a result of participants trying to best represent the exact meaning of the English phrase by placing the central adjectives in the preferred order and placing the prepositional phrase at the end so as not to change the meaning. The second most popularly chosen order was *drws newydd o goed trwm* which, although participant W001 translates it as 'a new door of heavy wood', probably sounds more natural to native speakers judging by just 20% labelling it as dis-preferred.

This phrase is one of five which had no clearly preferred order based on participants' responses. Two of these phrases were in Section B, which contained the four longer strings. The first was the Welsh version of the longest phrase used in my English questionnaire, adapted from Quirk et al (1985: 1341). In English, the most popular response, 'the large gloomy angular typical country house' was given by just 22% of participants, while a further 18% moved *typical* to the head of the string. In Welsh, the results are similar, with two equally preferred orders selected by 17% of participants respectively.

The phrase *y bêl blastig gron felen fwyaf* 'the biggest round yellow plastic ball' was equally preferred with *blastig* 'plastic' following the Mod-II string and before the superlative *fwyaf* 'biggest', both of which were selected by 20% of participants as the most natural order. Between the four longer phrases, there were 43 different orders given by participants, supporting Watkins' (2002) suggestion that the ordering among attributive adjectives is less rigid in Welsh. This also reflects the lack of longer adjective strings in the *CEG Corpus* as well as the observations made in *Chapter 5* that adjective order becomes less arbitrary, more variable and more difficult to predict in longer strings.

The other phrases for which participants suggest no clearly dominant order were questions 18 (*our usual two hot Chinese meals*) and 20 (*a scary thin dark face*). The latter is another adaptation from Quirk et al (1985: 1338) which was also used in the English questionnaire. Quirk et al suggest *thin dark face* as a phrase with no preferred order, and adding a more evaluative adjective to the phrase does little to change this. Despite including a colour term, a size adjective and a subjective quality, all six possible orders are selected by at least one participant as the preferred order and even the least popular answer was marked as unnatural by just 37% of participants, compared with 20% who marked the most popular answer as unnatural. One interesting observation here, however, is that *brawychus* 'scary' was placed last in the string by 50% of participants and the two least preferred orderings were those in which the subjective adjective was placed between the two more objective adjectives. This provides very strong support for the notion that orders distinguish between adjectives according to subjectivity (Whorf 1937, Quirk et al 1985, Ghesquière 2009).

The fact that more than one in six phrases had no dominant order suggested by participants is reflected in the comments made in question 30. 27% of responses involved some reference to changing the emphasis or focus of the phrase by varying the ordering. W010 and W015 both note that changing the order of the adjectives emphasises different properties, while W025 suggests:

'Generally, I think that more emphasis is placed on the last adjective and a stronger relationship is conveyed between the noun and the adjective which immediately precedes or follows it.'

This is the opposite effect to that observed by English participants in *Chapter 5* and Northern Sotho speakers in *Chapter 7*, whose observations included the first adjective in a phrase being emphasised. However, three participants who completed the English questionnaire noted that the last adjective in the phrase was the most important, which suggests parallels with the notion of the adjective closest to the noun having a stronger relationship with the head. This is certainly observable in question 28, in which the two most preferred orders begin with *tŷ gwladaidd FictoraiddFictoraidd* 'Victorian country house', with *nodweddiadol* 'typical' appearing either side of the Mod-II string *mawr tywyll* 'big gloomy'. In English, it sounds very strange to place *country* anywhere else in the phrase due to the strength of the collocation with *house*.

The preferred orders in the remaining phrases are shown in *Table 8.8*:

%	Welsh	Lit. English	Order
97	**dyn tal yn rhedeg**	**Man tall running**	**Same**
93	**ci blinedig byr ei wynt**	**Dog exhausted panting**	**Same**
73	**sliperi bach glas hudolus**	**Slippers small blue magic**	**Same**
73	**cyfreithiwr tal golygus yn gwenu**	**Lawyer tall handsome smiling**	**Same**
63	**tŷ bach hyll Cymreig**	**House small ugly Welsh**	**Same**
60	**ci mawr llwyd Saesneg**	**Dog big black English**	**Same**
97	teimlad glân rhyfeddol	Feeling clean wonderful	Reverse
90	dŵr berw yn ageru	Water boiled steaming	Reverse
83	yr heddwas newydd blin dig	Policeman new irritable angry	Reverse
83	y ddwy ferch ifanc dlysaf	Two women young most beautiful	Reverse
77	hen flwch gwag diwerth	Old box empty useless	Reverse
70	cath frech ifanc gysglyd	Cat tabby young sleepy	Reverse
67	crys cotwm gwyrdd prydferth	Shirt cotton green beautiful	Reverse
60	peli sfferig glas yn sboncio	Balls spherical blue bouncing	Reverse
53	chwedl wern Ffrengig animeiddiedig	Tale folk French animated	Reverse
53	hen fwncïod benywaidd llwyd drwg	Old monkeys female grey evil	Reverse
47	newyddion gwleidyddol rhyngwladol difrifol	News political international serious	Reverse
40	Bwrdd gwyn hir llyfn drud	Table white long smooth expensive	Reverse
27	Glaniad lleuad cyntaf Americanaidd enwog	Landing moon first American famous	Reverse
77	*cyn dyn tân bach tenau*	*Former man fire small thin*	*Different*
73	*morwr meddw hapus yn canu*	*Sailor drunk happy singing*	*Different*
57	*wyau bach gwyn blasus*	*Eggs small white delicious*	*Different*
50	*myfyrwyr tramor deallus gweithgar*	*Students foreign intelligent hard-working*	*Different*
43	*yr eliffant Affricaidd enfawr blinedig*	*Elephant African huge exhausted*	*Different*

Table 8.8: Preferred Orders in Welsh PNPs

Of the 24 phrases for which there was a clearly preferred order, 13 of these had the exact reverse order of the phrase in English. A further six had the same order as in English, while five phrases had a combination of the two and hence display a different order. Only eight of these phrases had preferred orders which were selected by more than 75% of participants and can thus be considered to be relatively fixed. Phrases which have the same preferred ordering in both English and Welsh all included either central adjectives or verbal adjectives, which usually appear in this order. The most

strongly preferred (97%) of these orders was *dyn tal yn rhedeg* 'a tall running man', in which the size adjective is drawn towards the head and the verbal adjective is drawn toward the end of the string. This was also the case for *cyfreithywr tal golygus yn gwenu* 'a tall handsome smiling lawyer', in which the same dichotomy is present, with the subjective evaluative *golygus* 'handsome' sounding ungrammatical when following *yn gwenu* 'smiling' in 72% of responses, although a number of participants were happy to place it ahead of *tal* 'tall'.

Many of the phrases for which the preferred order was the mirror-image of the equivalent in English featured adjectives with different levels of permanence and subjectivity or from different zones of modification (Bache 1978) and hence functioning in hypotaxis. An example of this is question 9, for which 70% of participants selected *cath frech ifanc gysglyd* 'the sleepy young tabby cat' as the preferred order. WE01 suggests that *frech* 'tabby' appears closest to the head as it is the 'strongest adjective', qualifying this statement by suggesting that it is a more permanent characteristic than *ifanc* 'young' or *gysglyd* 'sleepy'. In this phrase, the more permanent, objective characteristics come closer to the head, while the more subjective and temporary qualities are placed later in the string. The same is true of the phrase *crys cotwm gwyrdd prydferth* 'beautiful green cotton shirt'.

For English, it was observed that adjectives sometimes have a semi-adverbial relationship (Huddleston and Pullum 2002: 562), with the phrase *the wonderful clean feeling* and *the useless old empty box* being strongly-preferred examples. This is also the case in Welsh to a similar extent, with an average of 87% choosing mirror-image orders to those in English. In the phrase *teimlad glân rhyfeddol*, the feeling is described first as *glân* 'clean' and then as *rhyfeddol* 'wonderful'. Similarly, in the phrase *hen flwch gwag diwerth*, the old box is described first as *gwag* 'empty', which leads to the subsequent suggestion that it is *diwerth* 'worthless'. These semi-adverbial orderings indicate a subjective judgement based on a more evident quality and reflect the opposite order of subjective and objective adjectives in the two languages.

For other phrases in which the preferred order is the opposite of that in English, Bache's (1978) principle of classification dictates that adjectives sub-classify the noun into increasingly smaller groups as the distance from the head increases. A most noticeable example of this is question 13, in which *chwedl wern Ffrengig animeiddiedig* 'animated French folk story' is by far the most preferred order, with nearly three times as many selections as the next most popular order. As in English, the head is placed into increasingly more delimited groups with each added adjective. A similar pattern appears in question 6 in which *newyddion* 'news' is first classified as being *newyddion gwleidyddol* 'political news', and then *newyddion gwleidyddol rhyngwladol* 'international political news'.

Adjectives in Welsh PNPs sometimes appear in an order different from that in English, but not in the exact reverse order (Willis 2006). This is due in most cases to the combination of different factors which contribute to the order in which adjectives are most commonly placed. For example, in question 24, the preferred order is:

196. *wyau* *bach* *gwyn* *blasus*
N-eggs ADJ-small ADJ-white ADJ-delicious
'delicious small white eggs'.

This string of three central adjectives can be subdivided into two smaller strings or 'secondary structures' (Muir 1972: 30), of subjective adjectives and objective adjectives. The evaluative adjective *blasus* 'delicious' is placed further from the noun than the more intrinsic adjectives denoting qualities of colour and size. Within the objective string, the size adjective *bach* precedes the colour term *gwyn*. Adjectives denoting size and colour are placed in the same linear order in English and Welsh, while adjectives denoting varying levels of subjectivity are organised only in relation to the head; this leads to a combination of 'same' and 'reverse' orders which ultimately results in a different order altogether. A similar pattern can also be observed in the phrase *yr eliffant Affricaidd enfawr blinedig* 'the huge, exhausted African elephant', in which a 'same order' Mod-II string is placed after the Mod-III adjective *africaidd* 'African'.

8.5 Summary and Discussion

Cinque's (2010) theory that there is a universal base structure which controls the normative order of attributive adjectives suggests that there are two possible ways to predict the sequencing within complex modification strings. Elements can be arranged in a basic linear order which is regular regardless of whether adjectives are prenominal or postnominal; conversely, adjectives can be ordered in relation to the head, giving rise to mirror-image sequences in languages with contrasting orders of adjective and noun. In Welsh, both of these structures exist depending upon the respective properties of adjectives within a string. Adjectives are organised in relation to the head in accordance with the relative subjectivity of the qualities denoted by each modifier; more subjective qualities are placed further from the head and hence appear closer to the end of the string. Similarly, adjectives are organised according to the same zones of modification as those proposed by Bache (1978) for English, with classifying adjectives coming closer to the head than descriptive adjectives, which in turn are followed by adjectives more specifying function. This has the same effect as combinations of objective and subjective adjectives in that a mirror-image order to that found in English is created.

As suggested by Thomas (1996), strings of objective Mod-II descriptive adjectives are typically placed in a similar semantic-based order to their English equivalents, with size adjectives preceding colour adjectives, which in turn precede adjectives of nationality and seem to follow adjectives expressing physical quality (gender, age, hardness and so on). The basic order for Mod-II adjectives is thus:

SIZE > PHYSICAL QUALITY > COLOUR > NATIONALITY

This means that, while King (2003) suggests that adjectives usually appear in the reverse order to that found in English, this is not always the case. I propose that there exist for Welsh PNPs three possible orders of 'same', 'reverse' and 'different'. While not all adjective strings have a preferred order in Welsh, in those which do, the sequence of adjectives depends on a range of factors which include subjectivity, function, semantics and permanence. As in English and Northern Sotho, longer strings have less rigid orders and the additional issues of focus, emphasis and contrast are relevant, with marked orders possible under different conditions. Only with an awareness of all these factors is it possible to determine the most natural-sounding order of elements in a Welsh PNP.

9 Poly-adjectival Nominal Phrases in Tagalog, Chinese and Polish

9.0 Introduction

In this chapter, I consider the order of attributive adjectives in Tagalog, Mandarin Chinese and Polish. Although the methodology is a little different from that employed in previous chapters, the structure remains the same. In 9.1, I give some background on the three languages which have been chosen, and a brief explanation of the reasons these languages were chosen. In 9.2, I provide a morpho-syntactic sketch of the adjective class in each language before presenting and analysing the data obtained from each set of participants and comparing patterns across the respective languages in 9.3. In 9.4, I offer a summary of my findings and propose some conclusions.

9.1 Focus Languages

In this study, it was decided that three languages would be investigated using the same methodology and phrases to consider to what extent adjective order is uniform across languages which possess a dominant ADJ-N order. Dryer et al (2013) at *The World Atlas of Language Structures (WALS)* suggest that three possible orders exist for the respective placement of noun and adjective: ADJ-N (27%), N-ADJ (64%) and 'no dominant order' (8%). Although prenominal adjectives are exhibited by only a quarter of the 1366 languages in the sample, seven of the ten languages with the highest number of L1 speakers have this order (Paul et al 2014).

As Welsh and Northern Sotho, both languages with postnominal adjectives, have been studied in considerable depth in the previous chapters, a case study of Mandarin and Polish (both of which have a dominant ADJ-N order) was undertaken to provide a comparison with the English data discussed at length in *Chapter 4*. Tagalog, the official language of the Philippines, is listed by Dryer et al (2013) as having no dominant order. This observation is based on Schachter and Otanes (1972: 118, 121-122), and will be tested and reconsidered in this chapter. Tagalog adjectives exhibit variable morphological structures depending on whether they precede or follow the adjective and also on their phonological structure. These properties are discussed at greater length in *9.2.3*.

Mandarin is the most broadly spoken of the Chinese languages, and is the basis of Standard Modern Chinese, or Putongha, the common language (Ho 2003: 126). All modification in Mandarin is prenominal, with adjectives, determiners, prepositional phrases and relative clauses all coming before the head (Po-Ching & Rimmington 2004: 85). There is some cross-over in the morphological structure of pre-modifying elements in the noun phrase which can make the identification and

distinction of adjectives potentially problematic. Further discussion of these properties of Mandarin adjectives is presented in *9.2.2*.

Polish is one of the most commonly spoken of the Slavonic languages and is the second most commonly spoken language in England (2011 Census), with 546,000 speakers across England and Wales, only 16,000 less than Welsh. Polish adjectives, like other Slavonic adjectives (De Bray 1951) have long and short forms depending on their function and have a variety of interesting characteristics, including 'emotive adjectives' which are graded forms suggesting affection or pathos (Sadowska 2012: 245) and cardinal and ordinal numerals, or 'numerical adjectives' (Bielec 1998: 166) which, like Northern Sotho adjectives, take adjectival morphology.

These languages were chosen, not just because of their interesting morphosyntactic properties, but also because of their status as languages commonly spoken in the UK. There are 70,000 speakers of Tagalog (2011 Census) in the UK and Mandarin is the language with the most speakers in the world at 840 million (2010 Census, Ethnologue). The fact that each language is spoken commonly in the UK made them sensible choices on a practical level, as the financial scope of the project is limited. The languages demonstrate an order of adjective and noun which is distinct from that of Welsh and Northern Sotho and provide a useful sample from which to study cross-linguistic variation in adjective ordering.

9.2 **The Adjective Classes of Mandarin Chinese, Polish and Tagalog**

9.2.1 Adjectives in Chinese

In Mandarin Chinese, all modification in a noun phrase falls before the noun (Wang 1995: 303). Tiee (1986: 9) observes that 'each of the constituents before the head noun limits the noun in some way', suggesting that modification in Chinese is generally restrictive in nature. Tiee subclassifies Chinese modifiers into quantifiers, adjective modifiers, nominal modifiers and measure markers. While Tiee's analysis of nominal modification is not particularly different from the equivalent structures in English, he notes that perhaps the most notable feature of modification in Chinese is the particle *de* which functions as 'a marker of modification' (1986: 122). Tiee (*ibid*) suggests that the particle is placed after the adjective it marks, but that it is 'not always obligatory'. There are modifiers which do not take the marker, some which nearly always do, and others for which the particle is optional. There are particular modification patterns which tend to imply the use of *de,* while other patterns are less likely to require the use of the marker. These include the subclass of modifier, its syllabic length and whether the modifier itself is modified. Consider the following examples:

Chinese	English	Subclass	Marker usage?
Zhèi xiānsheng	This gentleman	Determiner	No
Sānběn shū	Three books	Quantifier	No
Tā shū	His book	Possessive adjective	No
Fàguó jiǔ	French wine	Fossilized nominal collocations	No
Zhèngzhīng shì	Serious matter	Close relationship between adjective and head	No
Dā ren	Big person (adult)	Monosyllabic adjective	No
Hǎo de dōngxi	Good things	Monosyllabic adjective (marked for contrast)	Yes
Hěn da de ren	Very big person	Modified adjective	Yes
Cōngming de xuésheng	Intelligent students	Disyllabic adjective	Yes
Dìdi de míngzi	Younger brother's name	Possessive noun	Yes
Yuánzi de huār	Courtyard flowers	Nominal	Yes
Chànggér de shēngyīn	Singing voice (lit. sing-song voice)	Verbal relative	Yes
Shàngkè de xuesheng	The students who attended class	Relative clause	Yes

Table 9.1: Modification Patterns of Marker de (adapted from Tiee 1986: 122-134)

Wang (1995: 303) notes that 'A-de-N and A-N [constructions] differ grammatically and semantically'. Some of these differences are outlined in the table in *Table 8.1*. While the morphological behaviour of certain modifiers is outlined in the table above, these conventions are not always obligatory. While relative clauses and verbal relatives always take the marker *de,* this is not always the case with adjectives, which tend not to take the marker when monosyllabic, with longer adjectives more likely to be followed by *de*. The marker may also be used to suggest a contrastive or restrictive function in monosyllabic adjectives ('*good* things' as opposed to '*bad* things'), or to suggest a non-restrictive, descriptive function in longer adjectives.

Although adjectives and verbs can both function as modifiers in the noun phrase, verbs nearly always take *de,* while for adjectives, this is usually optional. As adjectives can also function as predicate heads without a copular, they are sometimes considered to be a kind of stative verb, and the two grammatical categories are certainly more similar in Chinese than in English. There are,

however, a variety of criteria by which they are mutually distinguishable, and Waltraud (2003: 2) suggests that 'this […] point of view is largely based on a superficial analysis of the syntax of attributive adjectives'. Huang et al (2009: 21) suggest that 'there are reasons for distinguishing adjectives from verbs in Chinese' and proposes a difference in the use of the word *dui* as one test, as well as outlining their contrasting reduplication patterns. Dixon (2004: 12) notes that, while the adjective class was once not recognised in Chinese, 'clear and unequivocal criteria are now apparent for the recognition of 'adjective' as a major word class in Mandarin'. Xu (1988) provides strong evidence for this, based on different nominal modification patterns, distinctive patterns of aspect when functioning as head of a predicate, and variation in derivational morphology. Baker (2003: 46) also notes that it is not uncommon for adjectives to be able to function as predicate heads, and that this does not necessarily imply that they are therefore a subclass of verbs (see Chapter 2 for more on this).

Po-Ching and Rimmington (2004: 62) refer to the marker *de* as the 'descriptive indicator' on the grounds that it not only indicates a modifying relationship between head and adjective, but that it suggests an element of description. They also suggest that 'monosyllabic adjectives have greater collocational restrictions and hence greater bonds with the head words they qualify [and] are therefore often placed directly in front of their head words without de' (2004: 63). The collocational restrictions suggested by the authors imply that monosyllabic adjectives have a more classifying and less descriptive function, and they go on to explain that 'monosyllabic adjectives, when modified by degree adverbs, become more descriptive than restrictive and therefore include the indicator' (2004: 64). Paradoxically, while quantifiers usually have a more specifying function, phrases such as *wúshù de shìshí* 'innumerable facts' (*Ibid*) can feature quantifying terms followed by the descriptive indicator, to convey a more descriptive function. Po-Ching and Rimmington (2004: 65) conclude by suggesting that 'adjectives vary in their functional capacity', and hence the varied and optional use of the marker *de*.

Li and Thompson (1989: 118) consider Chinese adjectives as a subclass of verbs, although they do recognise differing reduplication and morphological patterns. They refer to the marker *de* as a 'nominalizer', and suggest that the presence of the marker suggests that the adjective is appearing in a relative clause. They observe that 'in general, adjectives that modify a noun without the particle *de* are more closely knit with the noun' (1989: 119), and note that *de* is usually obligatory when using adjectives in a non-restrictive capacity. They also suggest that it is more reasonable to perceive 'red flowers' as a subcategory of the head, than to consider 'comfortable chairs' as an equivalent subcategory of chairs. This seems to imply that adjectives conveying subjective judgements are more

likely to take *de* than those which denote objective, undeniable qualities. Wang (1995) offers a thorough examination of the range of possibilities for *de*.

Tiee (1999: 126) notes that 'when two or more disyllabic adjectives are used in a sequence to modify a noun, the marker *de* must be added after the last modifier before the head noun, and another *de* may appear between the modifiers. He gives the following phrase as an example of this kind of structure:

197. *cōngming (de) piàoliang de háizi'*
ADJ-intelligent (DP) ADJ-pretty DP N-child
'intelligent, pretty child'

Tiee (1986: 134) also notes that relative clauses appear earlier in modification strings than adjectives, and always take the modifier *de*. In noun phrases which feature relative clauses and adjectives, he suggests that the *de* is not usually repeated after the adjective, or after any nominal modifiers.

Li and Thompson (1989: 124) suggest that the order of elements within a noun phrase is 'fixed according to one of the following schemas:

a. associative phrase + classifier/measure phrase + relative clause + adjective + noun

b. associative phrase + relative clause + classifier/measure phrase + adjective + noun'

This is to say that possessives and prepositional phrases always come first in a modification string, while verbs, relative clauses, classifiers and quantifiers always precede adjectives. This is a pattern which is also proposed by Po-Ching and Rimmington (2004: 84), who go into much greater detail and suggest that the sequence for attributives is as follows:

POSSESSION (noun) > LOCATION (PP) > TIME (noun) > SCOPE (dem/adj) > STATE/ACTIVITY (verb/rel) > CHARACTERISTICS (adj) > SHAPE (adj) > COLOUR (adj)> MATERIAL (noun) > FUNCTION (noun/verb)

The authors acknowledge that a noun phrase of such length and detail is more hypothetical than natural, but suggest that this is the most normative ordering for such a phrase. They offer an example of a noun phrase containing all of these modifiers, thus:

'tā xiéjià shàng qùnián nèi (yī) shuāng chuān le yòu chuān (de) pòpò lànlàn de jiāntóu de hèsè miánbù tuōxié
(lit. her+ shoe-rack-top+ last year+ that+ (one) pair+ wear and again wear (de)+ tattered de+ pointed

toe de+ black colour+ cotton cloth+ drag shoes)
That pair of tattered, black cotton slippers on the shoe rack with pointed toes that she wore over and over again last year'

(Po-Ching & Rimmington 2004: 84)

Sproat and Shih (1991: 565) examine the ordering restrictions among adjectives in Chinese and suggest that a first impression of adjective sequences in Chinese might lead to 'the conclusion that there is no evidence for [adjective order] restrictions in that language'. They note that in phrases such as *a small green vase*, adjectives can appear in variable orders as long as each adjective is followed by the marker *de*. However, when adjectives are not followed by the marker, the authors suggest that the order in which adjectives appear is similar to English (a claim which is supported by other studies including Larson and Takahashi, 2007) and follows the pattern:

SIZE > COLOUR > QUALITY > SHAPE (Sproat and Shih 1991: 566)

As well as proposing this ordering for adjectives without the marker *de,* the authors note (1991: 590) that not all combinations of these semantic subclasses appear, with QUALITY-SIZE and SHAPE-COLOUR 'for some reason' not possible. Sproat and Shih also suggest that no more than two bare adjectives (without *de*) can appear in the same modification string. This analysis contrasts somewhat with that of Po-Ching and Rimmington (2004: 84) in that the latter suggest that colour terms appear later in the string, and make no overt reference to adjectives of 'quality'.

Sproat and Shih (1991: 569) note that adjectives appearing before the head, without *de,* function in 'direct modification', while adjectives which are followed by the marker are considered 'indirect modifiers'. Direct modifiers are seen as being constrained by adjective ordering restrictions similar to those in English, while indirect modifiers are not. By thinking of indirect adjectives as being a kind of relative clause, Sproat and Shih (1991: 585) suggest that these adjective are working in parallel, and propose this as an explanation for the lack of ordering restrictions. They liken this to a lack of restrictions on postnominal adjective order in French (a concept which contradicts the work of Cinque, 2006) but contrast it with Celtic languages where 'the linear ordering is the same as in English' (an incomplete evaluation when considering the evidence presented in Chapter 8).

Waltraud (2003: 3) claims that Sproat and Shih's analysis of indirect adjectives as relative clauses 'does not bear further scrutiny' and points out that the 'huge class' of adjectives without a predicative form can (such as *tianran* 'natural'), and regularly do, function as attributives preceding the marker *de*. He goes on to suggest that the absence of *de* between a modifier and head suggests

that the modifier denotes 'a defining property' (2003: 11) of the table and the presence of the marker indicates a more incidental property. Waltraud (2003: 13) claims that Sproat and Shih's suggestion that modification with *de* is without restrictions is 'not correct' and that changing the ordering in such phrases 'gives rise to a different interpretation' and allows adjectives closer to the noun to be more classifying while those appearing earlier in the sequence are more descriptive. In this sense, a big black dog is seen as being 'defined by its black colour and whose (big) size is presented as a temporary property'.

9.2.2 Adjectives in Polish

Polish adjectives are representative of the class in Slavonic languages, in that they are typically prenominal and exhibit morphological changes, normally in the form of inflectional suffixes to exhibit concordial relation with the head noun (De Bray 1951: 14). Bielec (1998: 157) notes that 'attributive adjectives precede the noun if they refer to an incidental feature of it [and] follow the noun when referring to an intrinsic feature'. The author gives the following (adapted) examples:

198. *kupiłem* *biały* *samochód*
V-buy1PS-PAST ADJ-white N-car
'I bought a white car'
[not all cars are white]

199. *język* *polski* *jest* *trudniejszy* *niż* *język* *niemiecki*
N-language ADJ-Polish V-be3PS-PRES ADJ-harder PREP-than N-language ADJ-German
'the Polish language is more difficult than the German language'
[only one Polish/German language exists].

In the above examples, *biały* is considered to be prenominal in that it modifies and describes rather than classifies or specifies, in the same way that *polski* and *niemiecki* specify a particular language. This distinction reflects the functional typology proposed by Bache (1978) in which English adjectives are placed in an order which reflects the kind of modification they provide for the head. Rutkowski (2012: 1) echoes Bielec and suggests that 'when postposed, Polish adjectives typically receive a classifying interpretation, in other words, they indicate a type or category that the denoted entity belongs to'. To this end, Rutkowski considers postnominal adjectives as functionally distinct from prenominal adjectives, 'whose function is purely descriptive'.

Cetnarowska and Trugman (2012: 1) suggest that postnominal adjectives in Polish form 'a heterogeneous class' with particular common properties. Rutkowski (2012: 2) goes on to note that some adjectives may be placed alternatively before or after the noun, but with a semantic difference. He uses the adjective *krzywa* 'curved' as an example. When modifying the head noun *linia* 'line', the adjective can appear prenominally or postnominally, but with a more intrinsic and inherent quality suggested by the latter. The author translates *linia krzywa* as 'a curve', while *krzywa linia* is translated as 'a line which happens to be curved'. Similarly, Sadowska (2012: 220) notes that *wielkie* 'great' can function prenominally (as in the Great Lakes) or postnominally (as in Peter the Great). Warren (1984) suggests that adjectives which have a classifying function usually appear closer to the noun than more descriptive elements, while she also notes that moving adjectives between these two positions can change the relationship they have with the head, in exactly the way Rutowski suggests. Adjectives in Polish inflect to agree with the head noun in class/gender, number and case (Sadowska 2012: 218). While singular forms of adjectives are distinguished according to whether they are masculine, feminine or neuter, in the plural, the distinction is between 'men' and 'non-men' (Bielec 1998: 159):

Singular			*Plural*		
Masculine	*Feminine*	*Neuter*	*Men*	*Non-men*	*English*
polski	polska	polskie	polscy	polskie	Polish
drogi	droga	drogie	drodzy	drogie	Beloved

Table 9.2: Adjective Suffixes in Polish (nominative case, class 2)

Some adjectives have short forms which are used only in the predicate, although for many adjectives this short form no longer exists, although Russian retains the majority of its short adjective forms (Wade 1998: 153). Adjectives in Polish which retain a short form include *godzien/godny* 'worthy', *winien/winny* 'guilty' and *pewien/pewny* 'sure'. As in Welsh (see Chapter 8), many adjectives have a different meaning when placed before or after the noun. Sadowska (2012: 221-222) notes that postposed adjectives often have a less descriptive and a more contrastive or identifying function, and are less commonly placed with indefinite nouns, giving the following examples:

200. *młoda* *kobieta*
ADJ-young N-woman
'a young woman'

201. *panna młoda*
N-lady ADJ-young
'bride'

202. *polski król*
ADJ-Polish N-king
'a Polish king'

203. *język polski*
N-language ADJ-Polish
'the Polish language'

204. *zagraniczny* gość
ADJ-foreign N-visitor
'a foreign visitor'

205. *polityka zagraniczny*
N-policy ADJ-foreign
'foreign policy'

Sadowska (2012: 220-1) also notes that some adjectives are placed after the noun for other reasons than to denote an intrinsic property of the head. These reasons include prosody, with the adjective coming second in terms such as *dzień dobry*, so as to maintain a penultimate stress system. Similarly, adjectives modifying food (*zupa pomidorowa* 'tomato soup') tend to follow the noun, as do indeclinable adjectives such as the loanword *blond*, as well as terms of nationality (*literatura francuska '*French literature') which are often postposed. Bielec (1998: 169) notes that 'Polish has three adjectival participles- present active, present passive and past passive'. While relative clauses are commonly used in Polish when equivalent participial adjectives are used in English, participial forms are also possible; *okno zamnięte* 'a closed window' is often preferred to the more long-winded *okno które ktoś kamknął* 'a window which someone has closed'.

Kemmerer et al (2009) observe that 'most of the ordering patterns found in English have also been observed in a variety of other languages that have prenominal adjective order—e.g., German, Hungarian, Polish, Turkish, Amharic, Hindi, Telugu, Chinese, and Japanese'. While Sproat and Shih's (1990) study supports this comment in Chinese, studies of Polish have also suggested some parallel's with English adjective order. Hetzron (1978) suggests that for many Polish noun phrases with more

than one adjective, alternative orders are possible, with *duża pjekna piłka* and *pjekna duża piłka* both equally possible for the phrase *beautiful red ball*.

Fedorowicz-Bacs (1974: 269) considers modification strings featuring more than one adjective, and notes that, as in English, sequences in postnominal position are generally 'a feature of the literary rather than colloquial style'. He also claims that the study of this phenomenon in Polish has not been approached by traditional grammarians, and is considered more of a stylistic feature. However, the author goes on to suggest that adjective order in English might be elucidated by the consideration that certain adjective-noun combinations are most regularly represented in Polish by a single noun, with the adjective suggested, such as *staruszek* 'old man' (1974: 272). These adjectives include adjectives of age and nationality, both of which usually appear close to the head.

Fedorowicz-Bacs (1974: 270) also argues that semantic orderings can be proposed for Polish just as for English, a notion which is supported by Sadowska (2012: 222) who notes that adjectives 'keep their respective positions' and are often separated by commas. She also suggests that general adjectives come before more detailed adjectives, a notion which reflects the postnominal positioning of classifying adjectives, perhaps the most detailed of all. Consider the following examples of Polish polyadjectival nominal phrases (adapted) from Sadowska (*ibid*):

206. *duża, drewniana łyżka*
ADJ-big ADJ-wooden N-spoon
'big wooden spoon' (same order)

207. *ceckawa, dobra literatura*
ADJ-interesting ADJ-good N-literature
'good interesting literature' (reverse order)

208. *móy stary rower*
ADJ-my ADJ-old N-bike
'my old bike' (same order)

209. *druga wojna światowa*
ADJ-second N-war N-world
'Second World War'

210. *pyszna* *zupa* *pomidorowa*
ADJ-delicious N-soup N-tomato
'delicious tomato soup'

211. *trudny* *egzamin* *końcowy*
ADJ-difficult N-exam ADJ-final
'difficult final exam'

9.2.3 Adjectives in Tagalog

The adjective class in Tagalog is perhaps the most complex and different from its English equivalent in this project. In this section, I consider the debate over the existence of an independent word class 'adjective' in the language and provide a brief morphological typology of Tagalog adjectives. I then outline their morphosyntactic behaviour, before providing a cursory look at the organisation of multiple attributive adjectives in Bloomfield's *Tagalog Texts with Grammatical Analysis*.

Although major works by Bloomfield (1917), Blake (1925), Alejandro (1963), Aspillera (1981) and Schachter and Otanes (1972) all recognise a class of adjectives in Tagalog, there has been some more recent opposition to the view that such a category exists. Gil (1993, 1995), Himmelmann (1991) and Cappell (1964) suggest that such a label is the product of Eurocentric attitudes towards language description and suggests that even nouns and verbs are not readily distinguishable in the language. Gil (1992) goes as far as to suggest that there is only one lexical catergoy in the language. De Guzman (1996: 307), however, disagrees with this suggestion, claiming 'ample evidence can be shown that classes of words differ in their morphological characteristics as well as their lexical derivational possibilities'.

Kroeger (1993: 1) recognises that 'opinion among specialists in Philippine languages continues to be divided' on this issue, while proposing that voice contrasts suggest the need to differentiate between verbs and nouns, a conclusion shared by Koch and Matthewson (2009). For the purpose of this project, the lexical category debate in Tagalog will not be discussed at great length, rather I will refer to 'adjectives' in the same way as Schacter and Otanes (1972: 195), as this is the most comprehensive work published to date on the language.

Alejandro (1963: 93) divides Tagalog adjectives into two morphological subgroups: simple and derived. Simple adjectives do not contain an affix and include *hinóg* 'ripe', *bago* 'new' and *diláw* 'yellow'. Derived adjectives are formed, as in English, from words from other noun classes through

the use of suffixes or phonological changes. The most common derivational suffix for Tagalog adjectives is *ma-* in adjectives such as *mabait* 'good', *malaki* 'big' and *maganda* 'beautiful' (Blake 1925: 35). De Vos (2011: 241) notes that 'some adjectives are identical to a noun except that the noun has a long vowel'. Her examples include *galit* 'angry' and *tulog* 'asleep', whose corresponding nouns *anger* and *sleep* are the same word but with the first vowel being long.

Adjectives in Tagalog can appear before or after the noun, and are always linked to the noun by a linking particle, either *na* or an *–ng* suffix (Ramos and Cena 1990: 66-7). The choice of these linkers depends upon the phonology of the final syllable of the first element, be it the noun or the adjective. If it ends in a vowel, the *–ng* suffix is used, with just a *–g* added to words ending in *–n*. If the first word ends in any other consonant, the word *na* is placed immediately after it. Ramos and Cena (*Ibid*) offer the following examples:

212.	*Lumang* libro/ librong *luma-*	*Old* book
213.	*Malaking* supot/ supot na *malaki-*	*Big* bag
214.	*Mabait* na bata/ batang *mabait-*	*Good* boy
215.	Gulong na *malambot*/ *malambot* na gulong-	*Flat* tyre

De Vos (2011: 34) only gives examples of prenominal adjectives, except for the phrase 'itong asong malaki at mabait' (this big and friendly dog- 2011: 57). Although De Vos makes no suggestion as to the conditions under which an adjective is placed before or after a noun, Schachter and Otanes (1972: 121-2) do go into more detail on this feature. They suggest that 'word order is much less fixed in simple modification constructions that involve modifying adjectives other than numbers or limiters' which they note always precede the noun. The authors suggest that new information tends to precede 'relatively well-known or self-evident information' and that N-linker-Adj order is preferred if 'the adjective and noun provide equally new or equally important information'.

This tendency, according to Schachter and Otanes (1972: 122) is only salient if the construction appears in an unmarked predicate, and in any other position within the sentence, word order 'is not significant' and Adj-linker-Noun and Noun-linker-Adj can be used interchangeably 'without any apparent difference in meaning'. However, they do qualify this claim with a suggestion that one factor which affects the choice of order is phonology, suggesting that *batang mabait* would be preferable to *mabait na bata* because it uses fewer syllables. In cases where the choice of order leads to a choice between using the *–ng* or the *na* ligature, the former is said to be preferable. McKinlay (1905: 57) suggests that the postnominal positioning of adjectives is seemingly preferable, as it reflects the orders in Malay and Spanish, although he notes that both are possible and suggest

that ‘with the spread of English it is not unlikely that the custom of using the adjective before the noun may become the usual construction’.

Bloomfield (1917) presents a series of Tagalog texts including folk tales, public advice documents and textbook entries on witchcraft and other such cultural issues. In these texts, I was able to study the conventions for choosing the order of adjective and noun in both simple and more complex modification strings. In the 52 pages of text, there are 42 examples of noun phrases which contain more than one adjective, and 270 examples of simple modification. Of these 270, 190 featured prenominal adjectives, while 80 features postposed adjectives. Although 70% of noun-adjective combinations were head-final, this figure includes modifiers which are more accurately described by Schachter and Otanes (1972: 121) as ‘limiters’. These structures include Mod-I type specifying adjectives (Bache 1978) such as *iba* ‘different’, *huliha* ‘final’, *boo* ‘whole’, *karaniwan* ‘usual’ and *ikapito* ‘seventh’, and are said always to precede the noun. However, even without considering these modifiers, the order Adj-N does seem to be highly preferred (66%) in these texts.

Adjectives following the noun included basic central adjectives such as colour terms (ang supot na *itim ‘*the *black* bag’), adjectives of age (anak na *dalaga ‘young* daughter’) and size (bayang *maliliit ‘small* towns’), as well as more fossilised collocations such as *Biyarnes-Santo* (Good Friday- a calque from Spanish) and *tubig na bendita* ‘holy water’. While many of the phrases with prenominal modification seemed to suggest a constrastive interpretation, it was surprising to find some limiting adjectives and even demonstratives following the noun in phrases such as *pangkat na kanilang* ‘the other team’, *bandang huli* ‘the last part’ and *gabi ding iyon* ‘that very night’.

The following examples demonstrate the range of possibilities for complex modification strings in Bloomfield’s (1917) texts:

<u>Postnominal Strings</u>

216. *taong malalakas matapang-*
N-men ADJ-strong ADJ-brave
‘strong brave people’ (same order)

217. *kasamang musikung bungbong*
N-instruments ADJ-musical ADJ-bamboo
‘bamboo musical instruments’ (reverse order)

218. pusang *itim* *na* *humuni*
N-cat ADJ-black LIG VB-purring
'a black purring cat' (same order with participle)

219. manikang *maliit* at *masamang* *hitsura*
N-doll ADJ-small CONJ ADJ-bad N-appearance
'small ugly doll' (coordinated, same order)

220. taong *salbahe* *malulupit* at *mababagsik* at *walang* *pitagan*
N-men ADJwild ADJfierce CONJ ADJcruel CONJ PREPwithout Nrespect
'Disrespectful, cruel, fierce, wild men' (reverse order)

Prenominal Strings

221. *bagong* *yaring* *bakol*
ADJ-new ADJ-hand-made N-basket
'a new handmade basket' (same order)

222. *malaki* *at* *katutubong* *galit*
ADJ-big CONJ ADJ-inherited N-anger
'a great and inherited hatred' (coordinated, same order)

223. *malaki* *at* *maitim* *na* *bagay*
ADJ-big CONJ ADJ-black LIG N-object
'a large black object' (coordinated, same order)

Pre- and Postnominal Adjectives

224. *bagong* *tawong* *makisig*
ADJ-new N-man ADJ-elegant
'an elegant new man' (a gay bachelor, reverse order)

225. *maraming* *nalalamang* *salitang* *Kastila*
ADJ-many ADJ-known N-words ADJ-Spanish
'many known Spanish words' (same order, with Spanish postposed)

From Bloomfield's (1917) texts, it is clear to see that there is a range of syntactic possibilities for Tagalog adjectives when modifying a noun in complex modification chains. Adjective strings appear in broken and unbroken sequences (Bache 1978), and can appear in strings both before and after the noun as well as a combination of the two. Orders are often the same as those of the equivalent phrases in English, but there are also examples of mirror-image orders, particularly in postnominal strings, which is perhaps an influence from Spanish (see Cinque 2010 for a detailed description of this). In the example *kasamang musikung bungbong* 'bamboo musical instruments', this reverse order reflects Bache's (1978) principle of classification, in accordance with which, the instruments '*kasamang*' are classified first into the subgroup of musical instruments (*kasamang musikung*) and then into the further subgroup of those musical instruments which are made from bamboo.

Further analysis of the restrictions and preferred adjective ordering in Tagalog is presented in section *9.3.*

9.3 **Data Analysis**

As the questionnaires in each language feature the same combinations of adjectives, the results are presented question by question, with the structures of each compared across the three languages. For each language, the preferred order is presented first, before discussion of the data. Conclusions as to the differences in overall behaviour between the languages are presented in section *9.4*.

Phrase 1: "The fat American student"

226. Chinese: *měiguó pàng xuéshēng*
ADJAmerican ADJfat Nstudent

227. Polish: *gruby student z Ameryki*
ADJfat Nstudent PPAmerican

228. Tagalog: *matabang Amerikanong estudyante*
ADJfat ADJAmerican Nstudent

Although in English, there is a clearly normative ordering for this phrase, with *the American fat student* sounding unnatural unless implying a marked stress, this is not the case in any of the three compared languages, although Tagalog does have this order narrowly preferred:

English	Chinese	Polish	Tagalog
Fat-student-American		**100**	**33**
American-fat-student	**75**		
Fat-American-student	**25**		**42**
Student-American-fat			17
Student-fat-American			8

In Polish, the adjective *American* is represented by a prepositional phrase, *z Ameryki* and hence always follows the noun, while in Chinese the adjective of nationality *měiguó* was preferred in string-initial position to *pàng* 'fat' by 75% of participants. Speakers of Tagalog had more potential for variation in this phrase, with no phrase being strongly preferred by the sample and the only orders not selected featuring *Amerikano* at the start of the phrase. While this might be seen as the result of contact with Spanish, from which the adjective is borrowed, the most popular response had both adjectives functioning in prenominal position, which does not reflect the predominantly postnominal adjective class in Spanish. Overall, 69% of participants had the size adjective appearing earlier than that of nationality, which reflects many semantic order theories for English (see *Chapter 4*):

	Fat	American
First	**69%**	31%
Last	31%	**69%**

Phrase 2: "The other red shoe"

229. Chinese: *lìngwài yī zhī hóng xié*
ADJother DET Npair ADJred Nshoe

230. Polish: *drugi czerwony but*
ADJother ADJred Nshoe

231. Tagalog: *kabilang pulang sapatos*
ADJother ADJred Nshoe

The most frequent ordering for this phrase in Tagalog, Chinese and Polish is the same as its English equivalent. In Tagalog, the word *other* translates as *kabila*, while in Polish, the cardinal numeral *drugi* 'second' is used to convey the same semantic interpretation. In Chinese, the structure *lìngwài yī zhī* (literally 'the other of the pair) is used to convey the same notion. In the latter two languages, this is the only order which is grammatically possible, with the reverse order sounding unnatural.

English	Chinese	Polish	Tagalog
Other-red-shoe	**100**	**100**	**50**
Other-shoe-red			33
Shoe-red-other			17

In Tagalog, once again, the order is more flexible, with a third of participants placing the colour term *pula* after the noun, with no change in meaning. The remaining 17% suggested the phrase *sapatos na pulang kabila* as a natural-sounding order, but with a slight change in meaning. This order suggests that the shoe with which this one makes a pair is not red, in the same way that the slightly awkward-sounding *the red other shoe* does in English. It is debatable whether this order is acceptable, and speakers may differ on this issue, but there is certainly a stronger suggestion that both shoes are red when one uses the phrase *the other red shoe*. Overall, less than 6% of participants placed the colour term before the specifier, reflecting English semantic order theories .

	Other	Red
First	**94%**	6%
Last	6%	**94%**

Phrase 3: "The angry shouting man"

232. Chinese: *nù hóu de nánrén*
ADJangry Vrun DE Nman

233. Polish: *zdenerwowanego krzyczącego mężczyzny*
ADJangry ADJshouting Nman

234. Tagalog: *sumisigaw na galit na mama*
Vshout LIG ADJangry LIG Nman

In the English version of this phrase, the adjectives can be switched without sounding ungrammatical, but the order with the adjective preceding the participle sounds more natural to native speakers (see Chapters 4 and 5 for more on this). In the Chinese version, the descriptive indicator *de* is preferred when using the verb *hóu* 'run' as a participial adjective.

English	Chinese	Polish	Tagalog
Angry-shouting-man	**100**	**75**	8
Shouting-angry-man		25	**42**
Angry-man-shouting			25
Man-shouting-angry			17
Man-angry-shouting			8

As can be seen from the results, the Polish equivalent of this phrase exhibits similar variation to that in English (see *Chapter 4*), with *krzyczącego* preceding *zdenerwowanego* in just 25% of responses. In Chinese, the order is very strict, with the verbal modifier having to follow the adjective, in accordance with Po-Ching and Rimmington's (2004: 84) analysis of the ordering of modification strings. In Tagalog, the ordering is more variable, with the preferred order in English, Polish and Chinese only selected by 8% of participants as the most natural in Tagalog. The two most popular orderings in this language contain the sub-structure *galit na mama* 'angry-man', with the verb placed alternately before or after. This suggests that the more descriptive 'adjectival' quality of the man's anger forms a closer collocation with the head than the verb does, with *sumisigaw* 'shouting' then used to modify this compound. 25% of participants across the three languages placed the verbal element before the adjective, with most of these being Tagalog speakers.

	Angry	Shouting
First	**75%**	25%
Last	25%	**75%**

Phrase 4: "*The difficult industrial work*"

235. Chinese: *kùnnán de gōngyè gǎngwèi*
ADJdifficult DE ADJindustrial Nwork

236. Polish: *trudna fabryczna praca*
ADJdifficult ADJindustrial Nwork

237. Tagalog: *pangindustriyang trabahong mahirap* (no dominant order)
ADJindustrial Nwork ADJdifficult

pangindustriyang mahirap na trabaho
ADJindustrial ADJdifficult LIG Nwork

mahirap na trabahong pangindustriya
ADJdifficult LIG Nwork ADJindustrial

English	Chinese	Polish	Tagalog
Difficult-industrial-work	**100**	**100**	**8**
Industrial-difficult-work			**25**
Industrial-work-difficult			**25**
Difficult-work-industrial			**25**
Work-difficult-industrial			8
Work-industrial-difficult			8

For this phrase, Tagalog again shows considerably more potential for variation than Chinese, Polish and English, all of which have fixed orders in which the evaluative central adjective *difficult* precedes the denominal classifying adjective *industrial*. In Chinese, the descriptive indicator *de* is obligatory and the phrase sounds unnatural without it. In Tagalog, all six orders for noun, central adjective and classifying adjective are selected by at least one participant as sounding the most natural. My Filipino participants were in agreement that any order is feasible for this phrase, and found it difficult to suggest one which sounds more natural than the others. Interestingly, 50% of Tagalog participants place *pangindustriya* in phrase-initial position. Schachter and Otanes (1972: 218) refer to this morphological subgroup as 'reservational adjectives', which translate loosely into English as prepositional phrases headed by the preposition *for;* in this case, the phrase would be *for industry*.

It is interesting to note that while this is a very strongly fixed order in all three languages with a predominantly prenominal adjective class, the process of sub-modification is not reflected in the same way in the syntax of Tagalog noun phrases. While it is clear that in Polish, Chinese and English, the adjective *difficult* modifies *industrial work*, the same cannot be said for Tagalog. In fact, these elements are split by the central adjective in 33% of responses from the Filipino participants, suggesting that the syntactic processes for this language are very different. Overall, the 19% of participants who placed industrial closer to the start of the phrase than difficult were all speakers of Tagalog.

	Difficult	Industrial
First	**81%**	19%
Last	19%	**81%**

Phrase 5: "new electric domestic appliance"

238. Chinese: *táixīn de guóchǎn diàn qì*
ADJnew DE ADJdomestic ADJelectric Nappliance

239. Polish: *do domu nowe urządzenie elektryczne*
PPdomestic ADJnew Nappliance ADJelectric

240. Tagalog: *bagong dekuryenteng kagamitang pangbahay*
ADJnew ADJelectric Nappliance ADJdomestic

Interestingly, all four languages have a different preferred order for this noun phrase. For English, Bache's (1978) principle of classification suggests that *electric* should precede *domestic* as the collocation *domestic appliance* is a more recognised category that *electric appliances*, though this

might be debated by native speakers. The proposed normative order in English is selected only once in this study, by a single Tagalog speaker.

English	Chinese	Polish	Tagalog
new-domestic-electric-appliance	**100**		
new-appliance-electric-domestic		**33**	**67**
domestic-new-appliance-electric		**42**	
new-electric-appliance-domestic		25	
new-appliance-domestic-electric			17
new-electric-domestic-appliance			8
domestic-new-electric-appliance			8

In Chinese, all participants selected the same ordering, with *diàn qì* a common collocation in Mandarin. This combination is then classified by the adjective *guóchǎn*, which gives the function of the appliance, before *táixīn* appears at the front of the string followed by *de* as the only 'central' adjective (Po-Ching and Rimmington 2004: 84). In Polish, the adjective *domestic* is most accurately translated using the prepositional phrase *do domu*. This leads to a situation whereby speakers are drawn to place the prepositional phrase at the end of the phrase as postmodification, or ahead of the phrase, where it functions more as an adjunct, denoting why the appliance was bought. Amongst the adjectives in Polish, *electric* never precedes *new*, and is used alternatively as a prenominal (25%) or postnominal (75%) adjective. Participants noted that either order was possible, but that postnominal on reflection seemed more natural. This reflects the notion that postnominal adjectives are seen to denote inherent qualities of a noun (Sadowska 2012: 220; Bielec 1998: 157; Rutkowski 2012: 1; Cetnarowska and Trugman 2012: 1).

In Tagalog, the two most preferred orders feature the descriptive adjective *bago* as the only prenominal adjective, while the classifying adjectives *dekuryente* and *pangbahay* appear after the noun. The order *electric-domestic* is strongly preferred here, which suggests that the order of specification is the same as in Chinese, with a mirror-image ordering in a postnominal string, in the same way as has been shown in Welsh (Chapter 8) and Romance languages (Cinque 2010). Overall, *new* never appears in string-final position, where *electric* appears most commonly.

	New	Domestic	Electric
First	**63%**	17%	0
Last	0	44%	**56%**

Phrase 6: *"the next important political decision"*

241. Chinese: *xià yīgè zhòngyào de zhèngzhì xuānyán*
ADJnext ADJimportant DE ADJpolitical Nannouncement

242. Polish: *kolejne ważne oświadczenie polityczne*
ADJnext ADJimportant Nannouncement ADJpolitical

243. Tagalog: *susunod na mahalagang pahayag na pampulitikal*
ADJnext LIG ADJimportant Nannouncement LIG ADJpolitical

This is the phrase which exhibits some of the most uniform behaviour within the focus languages. All three languages require the specifying adjective *next* followed by the descriptive adjective *important* at the head of the phrase, just as does English. Switching the position of these adjectives leads to an ungrammatical-sounding expression. While all modification is pre-head in Chinese, this stipulates that only one order is possible, while in Polish and Tagalog, the classifying adjective *political* can appear before or after the noun. In both languages, the adjective is postposed by the majority of participants, and many Tagalog speakers felt this was the only possible placement. This is one of the most fixed orders returned by Tagalog participants and in one of the longer strings. The fact that this string features three adjectives all from different Mod-zones strongly suggests that Bache's (1978) 'function-based' theory is more salient in prescribing orders in Tagalog than semantics.

In Polish, once again, the postnominal placement suggests a classificatory function, and a prenominal placement is more descriptive in nature. The use of the compound *polityczne oświadczenie* ('political announcement') might indicate perhaps that this is an announcement which is made for political reasons rather than separating it from other kinds of announcements (e.g. engagement) as might the alternative *oświadczenie polityczne*.

English	Chinese	Polish	Tagalog
next-important-announcement-political		**75**	**83**
next-important-political-announcement	**100**	**25**	**17**

	Next	Important	Political
First	**100%**	0	0
Last	0	0	**100%**

Phrase 7: *"the beautiful strong female gorilla"*

244. Chinese: *piàoliàng de qiáng zhuàng de mǔ xīngxīng*
ADJbeautiful DE ADJstrong DE ADJfemale Ngorilla

245. Polish: *piękna silna samica goryla*
ADJbeautiful ADJstrong ADJfemale Ngorilla

246. Tagalog: *magandang malakas na babaeng gorilya*
ADJbeautiful ADJstrong LIG ADJfemale Ngorilla

magandang babaeng malakas na gorilya
ADJbeautiful ADJfemale ADJstrong LIG Ngorilla

malakas at magandang babaeng gorilya
ADJstrong CONN ADJbeautiful ADJfemale Ngorilla

In the English version of this phrase, *strong* and *beautiful* can be interchanged depending upon stress, although Scott's (2002: 114) suggestion that subjective adjectives precede more objective adjectives would indicate that the more common ordering would place *beautiful* in string-initial position. This also concurs with Bache's (1978) principle of emotional load whereby more emotive adjectives come first.

English	Chinese	Polish	Tagalog
Beautiful-strong-female-gorilla	**75**	**50**	**25**
Strong-beautiful-female-gorilla	25	33	25
Beautiful-female-strong-gorilla		17	25
Strong-gorilla-female-beautiful			8
Strong-gorilla-beautiful-female			8
Female-gorilla-beautiful-strong			8

In all three languages, the collocation *female gorilla* is preferred, with this structure coming at the end of all responses by Chinese participants, with Polish and Tagalog responses at 83% and 50% respectively. In Polish, any order for the adjectives is possible as long as *piękna* 'beautiful' precedes *samica* 'female', while in Chinese the two central adjectives can be switched with much the same significance as in English. In Tagalog, a wider range of possibilities exist, with all three adjectives able to function in any position within the phrase, although in the results, *gorilya* never appears at the start of the phrase. When taking an overview of the three languages, it is clear that the adjectives generally appear most commonly in the same order as in English.

	Beautiful	Strong	Female
First	**72%**	33%	3%
Last	3%	17%	**65%**

Phrase 8: *"sharp green broken glass"*

247. Chinese: *fēnglì de lǜsè de suì bōlí*
ADJsharp DE ADJgreen DE ADJbroken Nglass

248. Polish: *ostre porozbijane zielone szkło*
ADJsharp ADJbroken ADJgreen Nglass

249. Tagalog: *basag na matalas na berdeng salamin*
ADJbroken LIG ADJsharp LIG ADJgreen Nglass

This phrase was chosen as it includes a participial adjective, a colour term and a term which describes a physical property. In English, any order sounds natural as long as *sharp* appears before *green*:

250. a. Sharp green broken glass
b. Broken sharp green glass
c. Sharp broken green glass
d. *Green sharp broken glass
e. *Green broken sharp glass
f. *Broken green sharp glass

In the most common orders in the three studied languages, a similar convention seems to apply, with *sharp* preceding the colour term in the most popular answer for each language. In Chinese, *suì bōlí* 'broken glass' constitutes a string-final collocation, with *sharp* and *green* interchangeable, although *green* is preferred closer to the head by two thirds of participants. Only one in six Polish participants put *porozbijane* 'broken' closest to the head, with the most popular sequence having the colour term after the participle. This trend also followed in Tagalog, where there was considerable variation for this phrase. 7 possible orders were attested by the 12 Filipino participants, with *salamin* 'glass' appearing at the end of the phrase in 67% of responses, and in penultimate position in the remaining 33%. This phrase exhibits more variation in Polish and Chinese than the previous examples and suggests that using longer strings of descriptive adjectives leads to less rigid ordering restrictions in these languages, as is the case in English (see Chapter 5).

English	Chinese	Polish	Tagalog
sharp-green-broken-glass	**67**		**8**
sharp-broken-green-glass		**58**	**17**
green-sharp-broken-glass	33	17	
broken-sharp-green-glass		**17**	**25**
sharp-green-glass-broken			17
green-broken-glass-sharp			17
broken-green-sharp-glass			8
green-broken-sharp-glass		8	
sharp-broken-glass-green			8

Across the three languages, *sharp* was selected in string-initial position in 59% of responses, and was most popular in this position in each of the three languages. Overall, it seems that *green* and *broken* are equally likely to occupy the string-final position, though *broken* always occupies this position in Chinese and *green* is preferred in Polish and Tagalog.

	Sharp	Green	Broken
First	**59%**	25%	17%
Last	11%	**44%**	**44%**

Phrase 9: "the tall old brown wooden cupboard"

251. Chinese: *zōngsè de gāo de jiù de mù guìlǐ*
ADJbrown DE ADJtall DE ADJold DE Nwood Ncupboard

252. Polish: *dużej starej brązowej drewnianej szafie*
ADJold ADJbig ADJbrown ADJwooden Ncupboard

253. Tagalog: *mataas na lumang kabinet na kahoy na kulay-kayumangging*
ADJtall LIG ADJold Ncupboard LIG ADJwooden LIG ADJbrown

With four adjectives, this phrase is the longest noun phrase examined in this chapter so far. There is one denominal adjective which denotes the material of the cupboard, while the other three modifiers are central descriptive adjectives, referring to size, age and colour respectively. In Polish, there is some scope for variation in the ordering of this phrase, although none of the adjectives are postposed in participants' responses. In Chinese, *mù* 'brown' is the last adjective in the string in 92% of responses, while in Polish this is slightly lower, with *drewnianej* appearing closest to the noun in 75% of orderings.

In Tagalog, the colour term is collocated with the head in every response, with *kahoy na kabinet* appearing in the responses of one in three participants, while the postposed form *kabinet na kahoy*

is more common at 67% of the sample. This structure appears in the two most commonly returned sequences, although neither of these was chosen by more than 25% of respondants. Both of these sequences, however, placed the noun in the middle of the phrase, with the size and age terms functioning prenominally, and the colour and material terms postnominally. *Luma* 'old' precedes the head in all responses by Tagalog participants, while *mataas* 'tall' is also preposed in 92% of phrases.

This syntactic separation of the adjectives into two groups is also common in Polish, just as it is in the English version of the phrase. In Polish, 83% of participants collocated *drewnianej* 'wooden' and *brązowej* 'brown', which may be associated with the fact that colour terms usually appear close to denominal adjectives denoting material in semantic order theories, while adjectives denoting age and size are also similarly found at the head of strings (Scott: 2002: 114; Bowers 1971; Goyvaerts 1968: 27; Dixon 1982: 17). Feist (2012: 37) notes that compounds featuring denominal adjectives often have a 'dual semantic structure', with the two terms combining to place emphasis upon a particular quality. This can certainly be seen to be the case with *brown* and *wooden*, which are two properties which have a logical semantic link.

English	Chinese	Polish	Tagalog
tall-old-brown-wooden-cupboard	**42**	**42**	
brown-tall-old-wooden-cupboard	**50**		**8**
tall-old-cupboard-wooden-brown			**25**
old-tall-cupboard-wooden-brown			17
old-tall-brown-wooden-cupboard		17	
tall-old-brown-cupboard-wooden			8
tall-wooden-old-brown-cupboard	8		
tall-brown-old-wooden-cupboard		8	
tall-brown-wooden-old-cupboard		8	
tall-old-wooden-brown-cupboard		8	
old-brown-wooden-tall-cupboard		8	
old-wooden-tall-brown-cupboard		8	
old-cupboard-wooden-brown-tall			8
old-tall-wooden-cupboard-brown			8
tall-old-wooden-cupboard-brown			8
old-tall-brown-cupboard-wooden			8

Interestingly, in Chinese, while the adjective *gāo* 'tall' always precedes *jiù* 'old', *zōngsè* 'brown' is preferred in string-initial position by 50% of participants. This is in contrast with the observations of Po-Ching and Rimmington (2004: 84) and Sproat and Shih (1990: 566), who both suggest that colour, as in English, appears later in a sequence than these adjectives. This evidence suggests that this convention may not be as clear cut as suggested by the authors. Overall, the most commonly chosen positions for the four adjectives in this phrase reflect the structure of the equivalent phrase in

English, *the tall old brown wooden cupboard*. This is the most commonly chosen order in Polish with 42% of participants suggesting it is as their preferred order, while in Chinese the equivalent proportion of participants selected the exact same order. It is clear in the table below that there is a syntactic separation between the two collocations *tall-old* and *brown-wooden*. This is more salient in Tagalog and Polish than in Chinese, where the colour term exhibits unexpected behaviour.

	Tall	Old	Brown	Wooden
First	**36%**	**25%**	19%	0
Last	6%	3%	25%	**67%**

Phrase 10: "a small white young talking female pig"

254. Chinese: *nianqing huì shuōhuà báisè xiǎo gètóu de mǔ zhū*
ADJyoung ADJsmart Vtalk ADJwhite ADJsmall DE ADJfemale Npig

xiǎo gètóu de huì shuōhuà báisè nianqing mǔ zhū
ADJsmall DE ADJsmart Vtalk ADJwhite ADJyoung ADJfemale Npig

255. Polish: *mała młoda biała świnka która mówi*
ADJsmall ADJyoung ADJwhite Npig RP Vtalk3singPres

256. Tagalog: *maputing maliit na batang babaeng baboy na nagsasalita*
ADJwhite ADJbig LIG ADJyoung ADJfemale Npig LIG Vtalk

maliit na batang babaeng baboy na maputing nagsasalita
ADJbig LIG ADJyoung ADJfemale Npig LIG ADJwhite Vtalk

This phrase was included to examine whether long strings of adjectives are possible in each of these languages, and if so, to investigate whether trends can be observed. All three languages show evidence that this kind of complex modification string is possible, though some participants remarked that the phrase might sound better if an additional clause or sentence is used. In Polish in particular, there were complications, with *swinka* 'pig' indicating femininity and not collocating naturally with *samica* 'female'. Similarly, the relative clause *ktoro mówi* 'which talks' was preferred to the participial adjective *mówiąca* 'talking', which participants suggested would indicate that the pig is talking at the time of description, rather than exhibits the potential to talk. This reduced the number of adjectives in this phrase to just three in Polish, while for the Chinese and Tagalog it is five. This leads to less possible orders with just six orders suggested in comparison to ten in the other two languages. In these responses, *small* was preferred in string-initial position in the two most popular responses, while *white* was most popularly placed at the end of the string by 50% of participants.

This trend follows in Chinese, in which *nianqing* 'young' and *xiǎo gètóu* 'small' (literally 'small-head') were selected in string-initial position in the only responses returned by more than one participant. The colour term *báisè* 'white' appears at the head of the string in 33% of responses suggesting, as in the previous phrase, that Chinese colour terms often appear earlier in the string than observed by theorists. In Tagalog, the noun appears at the end of the phrase in only 33% of responses, while the verbal adjective *nagsasalita* 'talking' is more popularly placed here by 58% of participants. Interestingly, this verbal form also appears in string-initial position in 33% of responses, with its polar linear positioning suggesting that it does not collocate naturally within strings of adjectives, rather remaining on the periphery.

The only other Tagalog adjective to appear in string-final position is *maputi* 'white', with *bata* 'young', and *maliit* 'small' both appearing more commonly towards the start of the phrase, while *babae* 'female' appears in the middle positions in 92% of responses. The two most popular orders in Tagalog feature *bata, babae* and *baboy* in a string; this might be explained by the fact that *bata* and *babae* are both from the morphological subgroup of adjectives which have a corresponding nominal form with a long vowel (De Vos 2011: 241). *Bata* has the nominal meaning of *child*, while *babae* refers to a woman. These adjectives might be said to be positioned closer to the head because, although they denote age and gender, qualities typically conveyed by central adjectives, morphologically these forms are more like denominal adjectives and hence are drawn toward the noun.

English	Chinese	Polish	Tagalog
small-young-white-female-pig-talking		**33**	
small-white-young-female-pig-talking		**25**	
white-small-young-female-pig-talking		**8**	**17**
young-talking-white-small-female-pig	**17**		
small-young-female-pig-white-talking			**17**
small-talking-white-young-female-pig	**17**		
young-small-white-female-pig-talking		17	
young-white-small-female-pig-talking		8	
white-young-small-female-pig-talking		8	
small-female-young-white-talking-pig	8		
talking-young-white-small-female-pig	8		
white-young-talking-small-female-pig	8		
white-young-small-talking-female-pig	8		
white-small-talking-young-female-pig	8		
white-talking-young-small-female-pig	8		
young-white-small-talking-female-pig	8		
young-small-white-talking-female-pig	8		
female-small-white-pig-young-talking			8
talking-white-young-small-female-pig			8

talking-small-white-young-female-pig			8
talking-pig-small-young-female-white			8
white-female-small-pig-young-talking			8
white-female-pig-small-young-talking			8
young-white-female-small-talking-pig			8
young-female-small-talking-white-pig			8

The large range of possible orders selected by speakers of each of the three languages shows that, when long strings of adjectives are used to modify a noun, the order in which they are placed is generally less fixed than in shorter phrases. However, this is not to say that there are not conventions and patterns which still apply. When considering the positioning trends across the three languages, it is clear that the most nominal and verbal adjectives tend to appear closer to the end of the phrase than adjectives denoting age, size and colour, reflecting once again the order of these elements in English. While in English, the colour term is more commonly constrained to appearing near the end of modification strings, its positioning in Chinese, as well as the more nominal forms of *young* and *female* in Tagalog, have led to it occupying an earlier average position in the overall statistics, which is much closer to *small* and *young* than might be otherwise expected.

	Small	Young	White	Female	Talking
First	**33%**	**25%**	**28%**	3%	11%
Last	0	0	6%	**31%**	**58%**

9.4 **Summary and Conclusions**

In this chapter, I have demonstrated through the use of equivalent questionnaires across three languages with adjectives exhibiting different morphosyntactic properties, that common patterns occur in strings of adjectives in languages which contrast both genealogically and typologically. While the ordering of adjectives in each language studied demonstrate noticeable differences, there exist certain conventions which are common across all three languages. The variation in the ordering within PNPs across the languages reflects to a large extent the morphological and syntactic relationships exhibited between different lexical categories in each language.

Of the three languages studied, Chinese exhibits by far the most fixed and restricted orders. This reflects the fact that all modification in Chinese noun phrases is prenominal, with verbs, nouns, prepositional phrases and relative clauses all appearing before the head. With such potential for complex patterns of premodification, it is no surprise to find that these elements are quite ritually ordered. On the other hand, there is more variation in ordering than might be expected, particularly in strings of central descriptive adjectives, with colour terms appearing earlier than predicted.

The order of adjectives in Polish is largely similar to English, although the potential for modifiers to appear postnominally with increased classificatory strength allows for some interesting semantically-motivated syntactic variation. While this is also possible in English in phrases such as *the red beautiful flower* (see Warren 1984 and *Chapter 4* of this thesis), it is a particularly marked order and usually involves a phonetic contrast emphasising the adjective with an increased classifying function. English participial adjectives do not always translate readily into Polish, with their context restricted to 'present active participles', (Schachter and Otanes 1972: 142) which refer to an action being performed by the head at the time of reporting. This is in contrast to the semantic range of participles in English and Tagalog, which can also refer to states (*a boring subject*) and potential (*a working mine*).

In Tagalog, word order within noun phrases is much more variable and in all of the examples studied here, there is more than one option. Even in phrases such as *difficult industrial work,* which are fixed in English, Chinese and Polish, these elements can appear in all six possible orders. Only in occasional phrases such as *the next important political announcement* do Tagalog noun phrases exhibit more fixed syntactic sequences. For this phrase, most participants believed that only one order is possible. This flexibility in ordering reflects the lexical categories in Tagalog, which are less clearly defined and more transient in nature. Although there is much greater variation in this language than in the others studied in this chapter, the language still exhibits particular trends in modification.

Overall, the data presented and conclusions drawn in this chapter suggest that, although sequencing in nominal modification strings is by no means universal across different languages, there are trends in adjective placement which transcend typological and genetic differences.

10. Discussion and Final Conclusions

10.0 Introduction

In this chapter, I present an overview and synthesis of the findings of this project and reflect on what conclusions can be drawn about the phenomenon of attributive adjective ordering on a cross-linguistic level. This chapter is in many ways a companion to Chapter 2; I revisit many of the concepts introduced in this earlier chapter and reflect upon them in light of the analysis I have provided in chapters 4 to 9. In 10.1, I reflect on the contribution the project makes to the debate surrounding the universality of the adjective class. In 10.2, I consider the extent to which semantic-based order theories in English can be applied to other languages, before doing the same for function-based order theories in 10.3. In 10.4, I offer some concluding remarks evaluating my research process and the findings of my project as a whole.

10.1 Adjective Order and Universality Theory

While this project does not investigate the universality of the adjective class explicitly, it is inevitable that a cross-linguistic investigation into the nature of such a widely discussed lexical category will provide material which is relevant to this issue. The decision to dedicate such an extensive project to comparing the syntax of attributive adjectives in languages which exhibit considerable typological, geographical and genealogical variation, in itself suggests an assumption that adjectives to some extent constitute a universal class. Having completed a cross-linguistic investigation into a syntactic phenomenon which is exclusively the realm of adjectives, I have provided strong evidence that there are properties which exist at a universal level which are characteristic of the adjective class. Although nouns and verbs can be stacked in similar ways in various languages, the cross-linguistic patterns cannot be identified to the extent that they can for strings of attributive adjectives.

This project involves the study of attributive adjective strings in six languages, three of which have been considered languages without a distinctive adjective class. Adjectives have long been labelled as nouns in Northern Sotho (Van Wyk 1967; Lombard 1975) and verbs in Chinese (McGregor 2009: 85; Li & Thompson 1989). In Tagalog, theorists such as Himmelmann (2007: 258) and Gil (2002) have suggested that lexical categories are an extremely complex phenomenon, with even verbs and nouns often considered mutually undistinctive. In *Chapter 6,* I provide strong evidence that adjectives constitute an independent class in Northern Sotho, and that the terminology used to refer to parts of speech in Southern Bantu (as developed by Van Wyk, 1967) is in need of revision. There are undeniable semantic, syntactic and morphological criteria which support the analysis of an

independent adjective class in the language, and equivalent categories in other Bantu languages are labelled adjectives. While Northern Sotho adjectives are considerably different from the equivalent word class in English, this does not justify labelling them as a subclass of nouns.

In *Chapter 9*, I demonstrate how Tagalog 'adjectives' exhibit properties which are different from nouns and verbs. In Chinese, adjectives are now commonly recognised as a distinctive class and the collocational behaviour demonstrated in *Chapter 9* supports this notion. The fact that each of these languages displays properties in common with one another in the way in which adjectives are combined in modification strings offers evidence that there are universal adjectival structures in languages even where syntactic and morphological criteria are not always considered sufficient to denote an independent lexical category. Although both the criteria for identifying adjectives and the members of the class vary on a cross-linguistic level, the failure to recognise adjectives as constituting an independent word class in a number of languages is detailed in this paper. I suggest that, along with the features commonly considered typical of adjectives (comparison, intensification, gradability, concord and syntactic behaviour), the ability to stack modifying elements in a string within a noun phrase is also strong evidence that the adjective class should be considered a universal lexical category.

10.2 Semantic Order Theory in Cross-linguistic Perspective

The six focus languages in this project have all been shown to have modification strings in which the order of elements is governed at least in part by the semantic subset to which each modifier belongs. While Vendler (1968: 126) suggests that adjective order is almost completely determined by semantics, in this project I have demonstrated that it is a much more complex and multi-faceted phenomenon. In *10.3*, I discuss the extent to which adjective order is governed by factors other than the purely semantic, but in this section I focus upon the differences and similarities of how 'stacked adjectival modification' (Scott 2002: 92) is organised in my focus languages.

Stacked modification involves the combination of descriptive adjectives usually operating in parataxis in a Mod-II sequence (Bache 1978). Such sequences include both central and peripheral adjectives which are traditionally divided into semantic subsets, with the most common being 'size', 'age', 'colour', 'nationality' and 'quality' (Dixon 1982; Goyvaerts 1968; Quirk and Greenbaum 1973: 404; Alexander 1990: 86). In English, the order in which these subsets appear is largely agreed upon as being fairly regular; size adjectives generally precede other adjectives, with the exception of some evaluative adjectives of quality; adjectives of nationality usually come at the end of a string with

colour terms usually preceded by adjectives denoting age. Although many other semantic subsets have been proposed, the order (QUALITY)-SIZE-AGE-COLOUR-NATIONALITY is generally recognised as being normative for unmarked strings in English.

This order is represented to different extents in my focus languages. Consider the following examples, which are based on the data sets discussed in previous chapters:

257. POLISH: *mała młoda biała świnka*
ADJ-small ADJ-young ADJ-white N-pig
'small young white pig'

258. CHINESE: *xiǎo gètóu de báisè nianqing zhū*
ADJ-small DE ADJ-white ADJ-young N-pig
'small young white pig'

259. TAGALOG: *maliit na batang baboy na maputi*
ADJ-small LIG ADJ-young N-pig LIG ADJ-white
'small young white pig'

260. WELSH: *mochyn bach coch smotiog*
N-pig ADJ-small ADJ-red ADJ-spotty
'spotty small red pig'

261. NORTHERN SOTHO: *legong le le-golo le le-thata le le-so*
N5-wood QP5 ADJ-big QP5 ADJ-hard QP5 ADJ-black
'big hard black wood'

Each of these phrases features a combination of a size adjective, a colour term and another adjective. In all five languages, the size adjective appears first in the string, even in Welsh and Northern Sotho, in which all of these modifiers appear in a postnominal string. Regardless of syntax, morphology and the order of adjective and noun, it tends to be the case in the data presented for each of my focus languages that adjectives of size appear at or close to the start of a string. In Welsh, Polish, Tagalog and Northern Sotho, colours are usually placed towards the end of the string, more so than terms denoting age or physical property, while in Chinese, colours are not always so susceptible to such an order. In fact, age terms such as *nianqing* above, are considered to form a closer bond with the head and hence usually follow colour terms in a prenominal sequence.

Nationality terms are not always adjectives in different languages; in Polish, they are more commonly denoted by prepositional phrases and in Northern Sotho by periphrastic nominals. In

Welsh, as in English they typically occur toward the end of a string, while in Tagalog and Chinese they are more variable. In Chinese they often precede size adjectives in phrases such as *měiguó pàng xuéshēng* 'fat American student', while in the equivalent Tagalog phrase, the adjective *Amerikano* 'American' tends to form a stronger bond with the head *estudyante* 'student' than does the size adjective *mataba* 'fat'. The fact that terms of nationality have a strong nominal characteristic separates them semantically from other more descriptive adjectives. In Polish, one has to say *gruby student z Ameryki* 'the fat student from America', while in Chinese the adjective *měiguó* is in fact the noun meaning 'America' used as a modifier.

Suggesting a semantic-based order for modifiers in languages which have postnominal adjectives either as a dominant (Welsh, Northern Sotho) or subsidiary (Polish, Tagalog) order is a more complex task than comparing languages with prenominal adjectives. Cinque (2006) notes that languages with postnominal adjectives can have a dominant order which is either the same as English or the reverse, and relates this to whether the language assigns modification to the right of the head, and whether N has been raised over adjectives within the phrase. The data from my focus languages seem to suggest that this is more salient when considering adjectives functioning in hypotaxis, rather than for Mod-II adjectives from different semantic subclasses, in which common orders are observable:

ENGLISH:	EVALUATIVE > SIZE > AGE > COLOUR > NATIONALITY > DERIVED FORMS
POLISH:	SIZE > AGE > COLOUR > DERIVED FORMS (> NATIONALITY)
CHINESE:	SIZE > NATIONALITY > COLOUR > AGE > DERIVED FORMS
TAGALOG:	SIZE > AGE > COLOUR > NATIONALITY > DERIVED FORMS
NORTHERN SOTHO:	SIZE > EVALUATIVE > COLOUR > OTHER FORMS
WELSH:	SIZE > AGE > COLOUR > NATIONALITY > EVALUATIVE

While these orders are by no means identical, there is a strong and observable uniformity to the structures across each language. Colour typically follows age, which usually follows size adjectives, while nationality generally comes toward the end of a string. However, evaluative adjectives are somewhat more varied.

In English noun phrases, I find that subjective adjectives tend to precede those denoting more objective qualities (in accordance with Whorf 1937, Bache 1978, Quirk et al 1985 and Ghesquière

2009). In Welsh, evaluative adjectives nearly always follow more objective terms such as size and colour, with the implication that subjective qualities are more commonly placed further from the head. In Northern Sotho, objective and quantitative adjectives such as those denoting size and number appear closer to the head than those which convey more subjective judgements such as *–be* 'bad'. Even in Tagalog, in which the order of elements is relatively free, the adjectives most commonly collocated with the head are those which are regarded as permanent and intrinsic, such as colour, gender and composition. The level of subjectivity conveyed by Mod-II descriptive adjectives relates to the extent to which a speaker is describing or simply classifying an object. Warren's (184) suggestion that adjectives placed closer to the head have a higher degree of classificatory strength is also salient here, with modification patterns in Tagalog, Northern Sotho, Polish and Chinese all supporting a function-based order theory as discussed in more detail in *10.3*.

10.3 Function-based Order Theory in Cross-linguistic Perspective

While semantic-based orders of adjectives have been shown to possess a degree of regularity across languages, such orderings are only applicable to adjectives working in parallel relation when modifying a head. The introduction of adjectives which specify, characterise and classify the head in different ways has resulted in a number of theorists investigating hypotactic sequences of adjectives including Bache's (1978) zone-based analysis and Muir's (1972) 'secondary structures'. The most interesting distinction between such analyses and those which rely exclusively on the often abstract meaning of individual adjectives, is that function-based order theories depend to a large extent on the kind of relationship each modifier has with both with the head and with other modifiers. This leads to explanations which involve accounting for the position of a modifier in terms of its proximity to head, rather than simply proposing its likely position in a string.

Bache's (1978) division of adjective strings into three functional zones allows us to analyse the way in which adjectives in different languages are organised within a string. Bache suggests that adjectives with a classificatory function (Mod-III) are placed closer to the head, while those which have a function which is more linked to identification and specification (Mod-I) will appear further from the head. More descriptive adjectives tend to appear in the central zone and are organised, as discussed in *10.2.*, largely according to semantic criteria. This analysis is often difficult to investigate in Tagalog and Northern Sotho but it can be tested for adjectives in Welsh, Polish and Chinese, which according to my data reflect the observations Bache proposes for English:

262. CHINESE: *xià yīgè zhòngyào de zhèngzhì xuānyán*
ADJ-next ADJ-important DE ADJ-political N-announcement
'the next important political announcement'

263. POLISH: *trudna fabryczna praca*
ADJ-difficult ADJ-industrial N-work
'difficult industrial work'

264. WELSH: *ein dau bryd Tsieineaidd poeth arferol*
DET-our NUM-two N-meals ADJ-Chinese ADJ-hot ADJ-usual
'our usual two hot Chinese meals'

In the Chinese example, there is an adjective from each of Bache's (1978) zones, appearing in the same order as predicted for English, with *xià yīgè* 'next' (Mod-I) followed by *zhòngyào de* 'important' (Mod-II) and *zhèngzhì* 'political' (Mod-III). Similarly in the second example, *trudna* 'difficult' (Mod-II) precedes *fabryczna* 'industrial' (Mod-III), and if a Mod-I adjective such as *kolejne* 'next' (Mod-I) were added, this would also function in string-initial position. In Welsh, the order is reversed as adjectives are placed to the right of the noun. This means that the Mod-III classifying adjective *Tsieineaidd* 'Chinese' appears closest to the noun in string-initial position, with the Mod-II adjective *poeth* 'hot' following before the Mod-I adjective *arferol* 'usual', which appears furthest from the head. These examples are representative of the dominant orders in each language according to my dataset.

The order in complex modification strings in Northern Sotho is more complex. As adjectives which fall into the Mod-III zone are not morphological adjectives in Bantu languages, this makes Bache's work more difficult to test. There are, however, Northern Sotho adjectives which are most accurately compared to Mod-I adjectives in that there are numerals and quantifiers such as *–pedi* 'two', *-ngwe* 'other' and *–ntši* 'many' which are all classified as adjectives. The fact that these modifiers tend to precede those with a more traditionally 'adjectival' quality suggests that the ordering of adjectives in Northern Sotho is more dependent on semantic criteria, with an additional distinction between quantifying and qualifying adjectives, as is often made in Chinese (Tiee 1986: 9).

This can be explained using Cinque's (2006) suggestion that postnominal adjectives are typically the result of N-movement. Cinque suggests that all languages have an underlying structure of DET-NUM-

ADJ-N and that N raises past ADJ for in some languages. For Northern Sotho, this would involve an additional movement above NUM, as discussed by Dryer (2008). As Northern Sotho does not have articles, this raises N to the top of the phrase. Such an analysis is problematic in that numerals which function as relative nouns in Northern Sotho remain postnominal and, in most cases, post-adjectival. Dryer considers Cinque's explanation incomplete on a broader typological level, while Bache's (1978) analysis is equally problematic in Northern Sotho. It is reasonable, however, to suggest that the latter applies more to languages like English and Polish, in which adjectives constitute a large, open productive class, than it does to languages with relatively small, closed adjective classes.

In Tagalog, Bache's order theory is observable to varying extents. Adjectives can occur before or after the noun, with the order of adjectives more or less variable, and focus often determining the order. However, as suggested in *Chapter 8*, there remain trends in ordering which reflect those found in English; adjectives precede the noun more often than they follow it, and those which follow it most often tend to correspond with those adjectives which are usually placed closer to the head in English. In some phrases however, Tagalog adjectives appear in a relatively fixed order. This is most notably the case in hypotactic sequences of adjectives from different modification zones, such as the following, which most Tagalog speakers considered the only natural-sounding order:

265. *susunod na mahalagang pahayag na pampulitikal*
ADJ-next LIG ADJ-important N-announcement LIG ADJ-political
'the next important political announcement'

While for each language studied, there seems to be a distinctive normative order in which adjectives are placed, the rigidity of these constraints is variable. For the ten sentences studied in Chapter 9, the average number of participants who chose the most popular order was 78% for Chinese, 68% for Polish and 41% for Tagalog. This suggests that the extent to which the order of adjectives is arbitrary differs from one language to another. While for Chinese, the order is relatively fixed, this is a little less so in Polish, while in Tagalog the order is virtually free. In English (58%), Welsh (60%) and Northern Sotho (62%), the figure is closest to that of Polish, with the order again fairly rigid overall.

10.4 Final Remarks and Conclusions

The languages studied in this project provide a representative sample of the cross-linguistic potential of the adjective class. Six different language families are represented, including big, open adjective

classes and also smaller more closed classes. The sample includes three languages in which adjectives are not always considered an independent lexical category, and covers languages which exhibit a wide range of syntactic and morphological properties. In terms of syntax, there are two languages in which adjectives typically follow the noun, three in which they precede the noun and one in which both orders are possible for most adjectives. In terms of morphology, Polish adjectives enter into complex inflectional paradigms typical of Indo-European languages while Chinese, English and Welsh are much more basic. Tagalog and Northern Sotho represent something of a middle-ground in terms of form, with some interesting morphological properties which are typical of Austronesian and Bantu Languages respectively. My methodology combines fieldwork and corpus data and has given me a reliable, broad and deep sample of data on which to base my analysis.

I have provided a very detailed analysis of adjective order in English and offered a critique of the various explanations of the factors which govern the sequencing of elements in English PNPs. By comparing the structure of PNPs in English with equivalent structures in my focus languages, I have been able to consider the extent to which these different factors operate on a more universal level, above that of an individual language. I have shown that in each language studied, there is a normative order in which adjectives are placed which depends upon such factors as function (classification, description or specification), semantics, subjectivity and permanence. All of these factors have some impact on the order of elements in PNPs in all of my focus languages, though the extent to which ordering is constrained varies from one language to another.

Of my six focus languages, Tagalog has the most noticeably free word order both in terms of the order of adjective(s) and noun and the order in which adjectives appear in a string. This is the first data-based study of PNPs in Tagalog, and their structure and usage by speakers is an area which merits considerable further investigation. Although many of the phrases I studied in this language have a range of possible orders, there was still one phrase which had a relatively fixed order. This is a fact which, above all other findings in this work, strongly suggests that there are ordering restrictions on strings of adjectives which exist universally across languages. Even in Tagalog, there were tendencies exhibited, both by native speakers and in Bloomfield's (1917) texts, to arrange adjectives most commonly according to semantic areas. The semantic areas which most strongly affect the order in which adjectives appear are uniform across my languages, and a general order can be proposed based on this study of:

SIZE > AGE > COLOUR > NATIONALITY

While this is by no means fixed, it is generally the case in my data that adjectives arranged in this order sound 'natural' to a native speaker of each of my languages. Sometimes terms of nationality are paraphrase using prepositional phrases (in Polish and Northern Sotho), which makes the order more complex. In each language, it is possible to sequence modifiers in a non-normative order, usually with the effect of emphasising and foregrounding a particular modifying element; this suggests that while the order of attributive adjectives can be seen to follow conventions which are more or less universal on a cross-linguistic level, the order in which adjectives are placed is often variable depending on the motivations of the speaker.

Issues of subjectivity and the modificational function of adjectives also have a major effect on the ordering of adjectives. Subjective and evaluative adjectives tend to appear most commonly further from the head than objective, physical characteristics in all of my focus languages. For this reason, I have not included evaluative adjectives in the list of semantic areas outlined above. This is most likely because objective characteristics have a more inherent bond with the head, and any evaluative judgement which is made is essentially secondary to such obligatory characteristics. This explanation is in line with Bache's (1978) zone-based analysis. In each language examined in this study, modifying elements which classify the head appear closest to it, with those which describe it appearing further away. In general, adjectives which have a more specifying function appear furthest from the head. This tendency is strongly evident in English and is equally consistent in Welsh and Polish, and even holds for Tagalog to a lesser extent.

A combination of factors affect the order in which adjectives appear in a modification string, with the resulting effect that a 'normative', expected order can be predicted for most noun phrases in a given language. In each language, it is possible to sequence modifiers in a non-normative order, usually with the effect of emphasising and foregrounding a particular modifying element. This suggests that while the order of attributive adjectives can be seen to follow conventions which are have a high degree of uniformity on a cross-linguistic level, the order in which adjectives are placed is often variable depending on the motivations of the speaker in a given context. It is through the recognition that these normative orders exist that it is possible to examine the range of motivations speakers may have for using alternative sequences.

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Appendices:

A1: The Socio-historical Context of the Northern Sotho Language

A2: English Questionnaire

A3: Northern Sotho Questionnaire

A4: Welsh Questionnaire

A5: Mandarin Chinese Questionnaire

A6: Polish Questionnaire

A7: Tagalog Questionnaire

A1

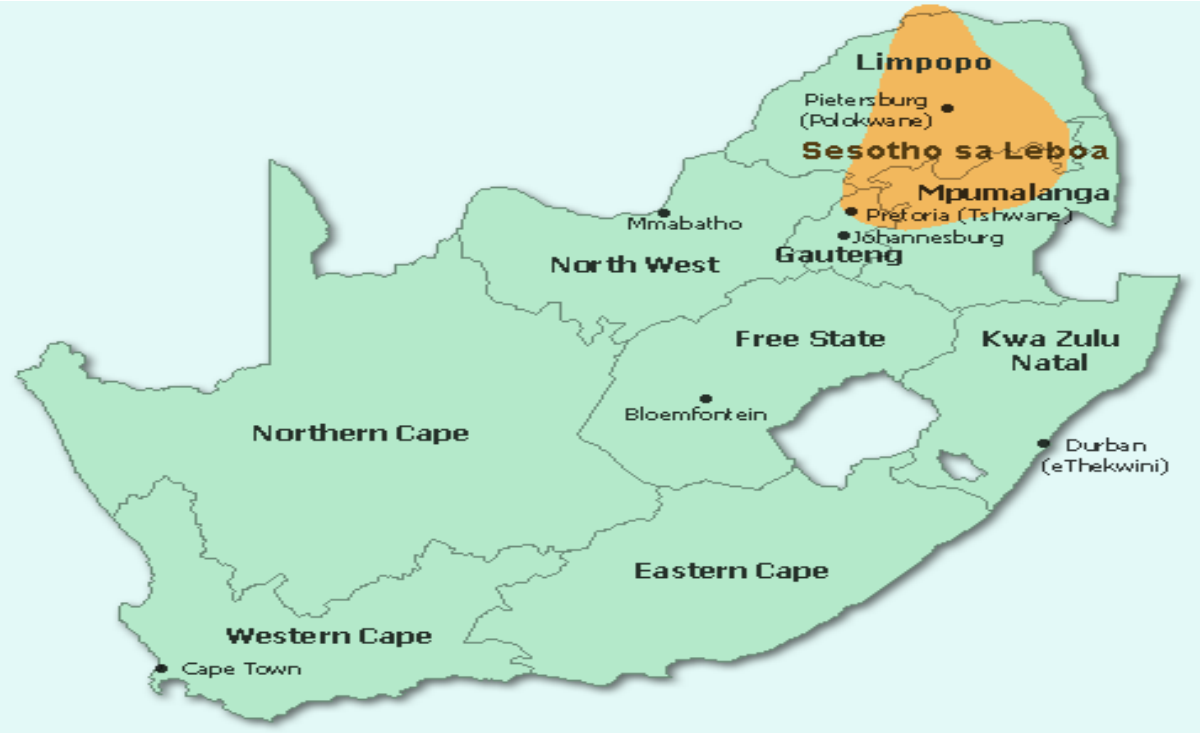
The Socio-historical Context of the Northern Sotho Language

Lombard (1985: 6) and Poulos and Louwrens (1994: 2) provide a description of the geographical spread of the language, with a map of the area inhabited by speakers of Northern Sotho shown in *Figure 5.1* overleaf. The first image displays areas where Northern Sotho is spoken, while the second indicates the area occupied by speakers of the Sepedi dialect. Hammond-Tooke (1980: 76) suggests that 'the North Sotho language is a fiction', claiming that 'there are many dialects so weak as to be rejected out of hand as certainly not standard'. The term *Northern Sotho* refers to a collection of 27 mutually intelligible dialects (Mokgokong 1966: 8-9) which are grouped together based on social, historical and geographical, as well as linguistic grounds. Lombard (1985: 5) suggests that the subdivision 'is based on historical and geographical grounds and does not reflect the interrelation of spoken dialects'. The UNISA website notes that these dialects can be divided into three distinctive subgroups:

(i) Dialects such as Sepedi, Sekopa, Sekone and Setau, found to the south of Polokwane.

(ii) Dialects such as Setlokwa, Sehananwa and sa GaMatlala, found to the north of Polokwane.

(iii) Dialects such as SePhalaborwa, Selobedu/Khelovedu and Sekhaga, found east of Polokwane.



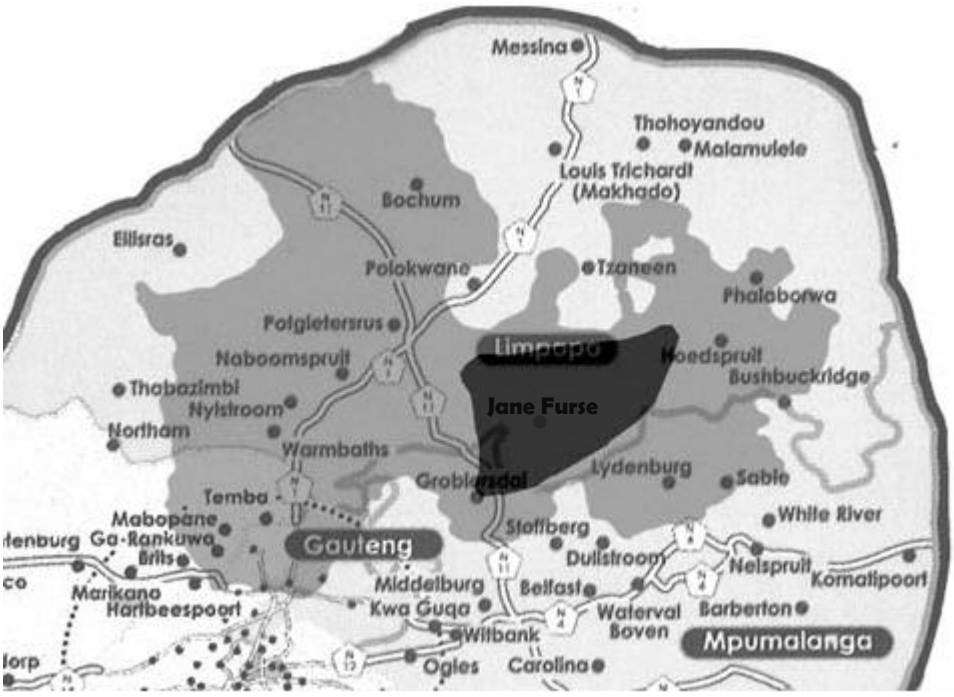


Figure 5.1: Geographical spread of Northern Sotho speakers and Sepedi dialect (sources: Africanlanguages.com and adapted from Zerbian 2009: 42)

The differences between these dialects are primarily, though not exclusively phonological, and it is suggested on the UNISA website that 'the differences between the dialects to the north and south of Polokwane are probably just as many as the differences between these dialects and Tswana or Southern Sotho'. Lombard (1985: 5) goes further to suggest that 'some speakers of a Northern Sotho dialect will understand speakers of a Tswana dialect better than they would understand speakers of another Northern Sotho dialect', and also acknowledges that 'in parts of the Transvaal, where Tswana and Northern Sotho border on each other, it is almost impossible to draw a clear dividing line between these two languages'.

Kotze (2001) studied the differences between nominal morphology in standard Northern Sotho and that of the Lobedu dialect spoken to the north-east of Polokwane and suggests that it is 'plausible that this variety could be one link in a dialect continuum spanning at least the east and most northern regions of the Northern Province'. Kotze found that the phonological system of the dialect is similar to that of Venda and Tsonga and acknowledges that 'Lobedu has been classified as a dialect of Northern Sotho by some prominent scholars although this classification has not always been accepted', although he does not go so far as to suggest that this is not the case. On the contrary,

Kotze rightly suggests that the dialect requires an increased level of attention in order to fully understand the regional variation exhibited by the Northern Sotho language.

Ziervogel (1969: 1) refers to the eastern Kgatla dialects as 'a bridge between the Tswana and Northern Sotho dialects', and notes that Tswana is sometimes known as 'Western Sotho'. The traditional genealogical classification of Northern Sotho is illustrated in *Figure 5.2* below:

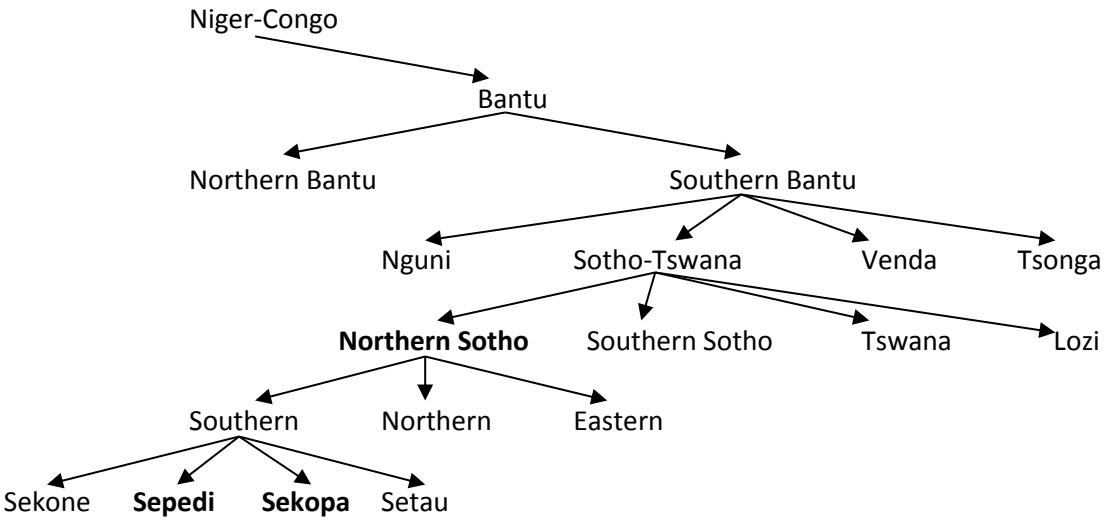


Figure 5.2: Genealogical Classification of Northern Sotho

The standard form of the Northern Sotho language is based on the Sekhukhuneland dialect of Sepedi (ALW), the language spoken by the Pedi people, and it is common to find Northern Sotho and Sepedi used alternately as names for the language. In fact, in the Constitution of South Africa (1998, available on gov.za, the South African Government website), the language is referred to as 'Sepedi' in its capacity as a designated official language. The most comprehensive electronic corpus developed for the language at the University of Pretoria by Danie Prinsloo is known as the *Pretoria Sepedi Corpus*, suggesting that the use of this term to refer to the language remains common and widespread in academic and linguistic arenas. The South African Languages Website (SALW) suggests that the language is often 'wrongly referred to as "Sepedi", while in actual fact the Sepedi is considered but a dialect of the language "Northern Sotho"'.

The development of names by which to refer to the dialects spoken by people on the Northern Transvaal is particularly problematic. While the South African constitution names Sepedi as an official language of the nation, it is apparent that this marginalises speakers of other dialects, some of which are quite different to the Sepedi dialect. The Lobedu dialect, spoken in Duiwelskloof and Tzaneen in the north-east of the Northern Sotho linguistic area is considerably different to Sepedi, as

Kotze (2001: 1) suggests 'it features numerous intriguing differences with Northern Sotho, ranging from phonological, morphological and syntactical to vocabulary'. A speaker of SeLobedu would be particularly unlikely to refer to the language spoken in this area as Sepedi.

Similarly, the term Northern Sotho is problematic in that, as Poulos and Louwrens (1994) point out, 'it is a term which is used to collectively refer to a number of dialects', but the etymology of the term is also an issue for some speakers. The term *Sotho* is a portmanteau neologism based on the phrase *mo**tho** yo mo**so***, meaning 'black person' in the native language (Mokgoatsana, P/C 2013), and hence is also met with cynicism by many speakers, particularly those of the Sepedi dialect. From my experience working in the Sekhukhune area, local speakers colloquially used the term *Sepedi* while *Northern Sotho* seemed restricted to more formal uses, such as when referring to a language course or a school subject. Even the term *Bantu* is considered problematic in South Africa as it is seen, like *Sotho* as a colonial label. Poulos and Louwrens (1994: 2) note that although this is an indigenous word simply meaning 'people', the term has 'also been used in contexts other than language, and in the Republic of South Africa, it has without doubt become stigmatised.' They note that, even within linguistic contexts the usage of the term Bantu has become something of a taboo as a result of the 'derogatory connotations that are associated with this term in its wider usage'.

In 2010 there was a Parliamentary Constitutional Review (http://www.pmg.org.za) which involved hearings featuring experts in the fields of 'language science, research and history' to discuss whether the official language should be known as Sepedi, Sesotho sa Leboa or whether both should be included separately. The review considered that Sesotho sa Leboa (Northern Sotho) was 'a standard form which is an all-encompassing language whose constituents are the languages with similar filial presence technically referred to as dialects'. Mojela (2008: 121) considers the development of the standardised Northern Sotho language, reflecting:

'Unlike the colonial rule which intervened to guide the standardization of languages like Kiswahili in the former East African Federation (Kenya, Uganda and Tanzania), and Shona in the former Rhodesia, the politicians in South Africa left the responsibilities of developing the indigenous education and the indigenous languages to the European missionaries.'

Mojela (2008) outlines the history of the origins of the standard Northern Sotho language, and also observes that it was based on the Sekhukhuneland dialect of Sepedi, which Karl Endemann (1836–1919) and his colleagues from the Berlin Evangelical Missionary Society used as the basis for his translation of the Bible. As the indigenous languages of the region had no formal written form in the mid-19th Century, the missionaries set up the Botšhabelo mission station on the banks of the river

Olifants and had to base their writing on the dialects of the region, which were Sepedi and (to a lesser extent) Sekopa. The mission station provided education for the people of the area, but all education in literacy was based on the Sepedi dialect, as the missionaries were not aware of the other varieties spoken further afield within the region.

This led to what Mojela (2008: 120) describes as a perception that 'these [other] dialects were […] 'corrupt' versions of the 'prestige' dialects and standard Sesotho sa Leboa'. Young people educated at Botšhabelo would return home often to families who spoke a different dialect, with a much-changed way of speaking. Mojela (Ibid) suggests that 'using Sepedi was to them a status symbol, while their own dialects were associated with illiteracy and inferiority'. This is reflected in the words of Hammond-Tooke (1980: 76, above) who suggested in 1937 that many dialects of the language were 'so weak as to be rejected out of hand as certainly not standard'. Already, just 50 years on from the opening of Botšabelo, a divide was being drawn between standard and non-standard forms.

This development of education in Sekhukhuneland led to a standard written form of Northern Sotho or Sesotho Sa Leboa (Ziervogel 1969: 1, literally *Sotho of the North)* as it is commonly known in the region it is spoken due to the possibly problematic nature of the term Sepedi, which only refers overtly to the one dialect of the language. Although the standard form is based originally on the work of the missionaries, it was developed officially largely through the work of Doke (1921) who based the orthography on pronunciation, predominantly that of the Pedi dialect. It has also been modified and developed with considerable influence from the works of authors who used their own dialects of Northern Sotho when writing. Such authors include M.J. Madiba, whose 'Mahlontebe' series of books was commonly used in education in the 1970s-90s and was based on the Sekone dialect, although Madiba himself was of Ndebele origin.

The influence of Sepedi on the standard form remains strong however, and although Lombard (1985: 7) suggests 'we finally have a written Northern Sotho language today which cannot be linked to any specific dialect', the language is still regularly referred to as Sepedi and Ramajela (2011: 30) suggests that 'the most important Northern Sotho group is that formed by the Pedi (Bapedi), Tau (Batau), Roka (Baroka) and Kone (Bakone), who are concentrated in Sekhukhuneland and adjoining areas'. Ziervogel (1969: 1) notes that 'many dialects are spoken, some of which differ considerably from the written language', and suggests that 'since it is impossible to build up a literary language if each one writes his own dialect, the Pedi language (Sepêdi), and later with Kôpa elements incorporated, was taken as the standard written form'. For reasons of ease, the language will be referred to in this chapter as Northern Sotho.

5.1.2 Work on the Language

Despite being one of South Africa's 11 official languages since 1994 (along with Southern Sotho, Tswana, Tsonga, Venda, Ndebele, Xhosa, Swazi, Zulu, English and Afrikaans), there has been relatively little work done on the Northern Sotho language. Kosch (1993, in Louwrens 1994: i) and Lestrade (1933: 66) suggest that the earliest descriptive work on the language was done in 1876, by Karl Endemann, the missionary who originally set up Botšhabelo mission station. Torrend (1899: xxi) makes reference to a 'Chwana cluster' of the Kua group of Southern Bantu languages, in which he suggests that Tlhaping, Rolong, Suto and Kololo 'must be considered as mere dialectal varieties'. Suto is, however, more in reference here to what is now conventionally known as Southern Sotho and is generally referred to only as part of the Chwana cluster throughout this work. Torrend (Ibid) looks at some 128 Bantu languages and hence only provides a cursory level of analysis which is relevant for Northern Sotho.

Beyer (1920) provides the first English text on the language, which he labels as 'the Pedi-Transvaal Suto Language'. This is a short but academic volume which was intended 'to be a practical guide… not only to Bantu students but also to traders, employers, Government officials and all who have to deal with the natives of this country' (1920: preface). Beyer was also keen for native speakers of the language to make use of his text and considered knowledge and respect for the local language essential to positive relationships with the indigenous people. He claims (Ibid) that 'we cannot get on well with the natives if we do not speak and understand their language'.

Hammond-Tooke (1974: 76) notes the influence of Pedi rulers on the language of the people commonly known here as 'North Sotho', but again the language receives only occasional mentions, with culture and history the focus of this volume. Denny (in Spencer 1963: 43) recognises Northern Sotho as a 'lingue franche' of the Northern Transvaal in his paper at the Leverhulme Conference on Universities and the Language Problems of Tropical Africa, while Alexandre (1967: 34) mentions the Sotho-Tswana language family as a group of languages which has inherited clicks from the Nguni languages. Beyer (1920) produced a handbook of 'the Pedi-Transvaal Suto Language', which is perhaps the earliest attempt to sketch the language and was aimed at providing support for tourists and business people who wanted to understand the language better. Although this is essentially a pre-standardisation publication, it still offers a valuable insight to the structure of the language, albeit it only representative of the Pedi dialect.

The work of 'ingenious scholar' E.B. Van Wyk (Louwrens 1994: i) was the first recognised comprehensive effort to describe and analyse Northern Sotho in a linguistic fashion. In the late

1950s he published several works in which he investigates copulatives, progressives and word order in Northern Sotho, and his seminal paper on the morphological description of word classes in the language (1967) provided the basis of the terminology which is used in Northern Sotho grammar today. Van Wyk's classification and description of Northern Sotho word classes is based on Doke's (1954) work on developing linguistic terminology for Bantu languages and is considerably different to the terminology employed in the majority of Indo-European languages. Van Wyk considered adjectival items to be a subclass of nouns, although their syntactic and morphological behaviour is somewhat different to other, more central nouns, a problem which is discussed further in 5.2.

Van Wyk's work throughout the second half of the 20th century inspired a number of other authors to produce work on the language, with the majority of studies produced in Afrikaans and/or English. The one notable exception to this trend was Nokaneng (1976), whose work *Segagešo* (literally, our language and customs) remains the most widely cited native Northern Sotho composition on the language. The most comprehensive descriptions of the language are by Ziervogel (1969), Lombard et al (1985), Poulos and Louwrens (1994) and Kotze et al (1995). Poulos and Louwrens (1994) is by far the most extensive of these volumes and is the most recent of the major works on the language. Louwrens also produced his *Dictionary of Northern Sotho Grammatical Terms* in 1994, with the aim of 'providing a better insight into many of the terminological inconsistencies and other issues which presently exist' within literature on the Northern Sotho language. Louwrens notes that his own co-authored volume of the same year (Poulos and Louwrens 1994) uses slightly different terminology to Van Wyk's (1967) and that 'the Dokean and Van Wykian schools of thought were at loggerheads on a variety of linguistic issues'.

In more recent years, the work of lexicographer Danie Prinsloo in developing dictionaries for Northern Sotho (1997) as well as his work in the development of the *Pretoria Sepedi Corpus*, a 6 million-token corpus of tagged, written Northern Sotho, has led to the possibility of additional work on the language. Much investigation of the grammar of the language has come about as the result of the reflexive process undergone by Prinsloo with Heid (2002) and de Schryver (2005, also a prolific lexicographer) in tagging the *PSC*. Faaß (2010) produced a thesis which provided a more recent morphosyntactic description of the language after working with Prinsloo and the *PSC*, while Kock (2000) noted that adjectives were 'incorrectly or incompletely described'. The work of Faaß (2010) and Zerbian (2006 and others) in recent years represents a growing interest in the language internationally. Subsequent works by Shai (2008) and Mphasha (2010) have provided further investigation of 'adjectives' in the language, with the former considering colour terms and the latter providing an extensive description of what might be termed the adjective class of Northern Sotho.

Participant ref: ☐☐☐☐

A2

Edge Hill University

An Edge Hill University Research Project

"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."

by Paul Flanagan

English Data Collection 2013

Questionnaire

Contents:

This questionnaire should take no more than 30 minutes to complete.

Please turn over for your information sheet.

Participant ref: ☐☐☐☐

Edge Hill University

INFORMATION SHEET

Title of project: **"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."**

Name of researcher: Paul Flanagan

This project aims to study language use and variation, focussing on how speakers of English deal with phrases which involve more than one adjective ahead of a noun, for example 'the big brown dog'.

The questionnaire which follows should take no more than 30 minutes to complete and requires you to consider a variety of phrases which contain more than one adjective, asking you to decide in what order you might places these adjectives. An example is given at the start of Section A.

You will be given the questionnaire to take home and will be able to complete it in your own time, though participants are asked to give the most spontaneous and natural responses possible. There is no right or wrong answer to any of these questions.

Participation in this project is completely voluntary, and no judgements will be made, positive or negative, based on participation or non-participation. Before submitting your questionnaire, you should first remove this sheet, which features your unique personal Participant Reference Number (PRN- at the top of the page). The data supplied are completely anonymous and your PRN is the only information which will be stored with your data.

If you decide that you no longer wish your data to be considered as part of this research project, you may withdraw without explanation at any point up to 30/4/2013. You should email the researcher on paul.flanagan@edgehill.ac.uk and must supply your PRN in order to withdraw your consent.

THANK YOU FOR TAKING THE TIME TO PARTICIPATE IN THIS PROJECT.

Edge Hill University

CONSENT FORM

Title of project: **"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."**

Name of researcher: Paul Flanagan

	Please tick box
I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	☐
I understand that my participation is voluntary and that I am free to withdraw by 30/4/13 without giving reason.	☐
English is my first language	☐
I agree to take part in this study.	☐

Signature of participant _____

Date _____

Signature of researcher _____

Date _____

Participant ref: ☐☐☐☐

Edge Hill University

THE QUESTIONNAIRE

For each question, rearrange the adjectives in brackets and insert them on the dotted line in the order you feel most natural. Give just **ONE** order for each. For each question, rank how difficult it was to choose a particular order-

1- Easy 2- Neither easy nor difficult 3- Difficult

Example:

1

sleepy brown Siamese
The …… cat (brown, sleepy, Siamese)

SECTION A:

1. A …… Jeep
   (black/run-of-the-mill)

2. A …….. home
   (beautiful/ state-of-the-art)

3. The …… story
   (animated/Brazilian/folk)

4. The …… singer
   (American/ classical)

5. The …… balls
   (bouncing/red/spherical)

6. The …… presidents
   (first/five/former)

7. The …… years
(colder/next/three)

8. The …… ladies
(most beautiful/two/young)

9. A …… Blue
(deep/fluorescent/vivid)

10. The …… child
(charming/hard-working)

11. The …… box
(empty/old/useless)

12. The …… feeling
(clean/wonderful)

13. The …… Girl
(beautiful/big/Irish)

14. The …… child
(annoying/little/nasty)

15. The …… Tutor
(former/most intelligent)

16. The …… man
(former/Russian/strongest)

17. The …… policeman
(angry/irritable)

18. The …… Moon landing
(American/ famous/first)

19. The …… meals
(Chinese/two/usual)

20. The …… competitors
(two/exhausted/final)

21. The …… years
(first/happy/three)

SECTION B:

22. The …… dress
(little/red)

23. The …… slippers
(little/magic/navy)

24. The …… ball
(blue/crystal/small)

25. The …… judge
(retired/rich)

26. The …… face
(dark/scary/thin)

27. The …… ball
(big/plastic/round/yellow)

28. The …… toolbox
(handy/practical/sensible/useful)

29. The …… house
(angular/country/gloomy/large/typical)

30. The …… man
(running/tall)

31. The …… fashion
(fantastic/French/latest/stunning)

32. The …….. dog
(angry/barking/big/brown)

33. The …….. water
(boiled/steaming)

34. The …….. dog
(exhausted/panting)

35. The …….. detective
(pleased/satisfied)

36. The …….. paint
(deteriorating/flaking)

37. The …….. biscuits
(broken/demoralising/disintegrating)

SECTION C

38. How difficult overall was it to decide upon what you thought was the most natural order?

.....

.....

.....

.....

.....

.....

39. What factors do you think affect your choice of order?

.....

.....

.....

.....

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.....

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.....

.....

40. How often would you say there is more than one potential order?

0-25% ☐ 25-50% ☐ 50-75% ☐ 75-100% ☐

END OF QUESTIONNAIRE- THANK YOU FOR YOUR TIME.

Participant Ref Number: ☐☐☐☐

A3

An Edge Hill University Research Project

"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."

by Paul Flanagan

Northern Sotho Data Collection 2013

Questionnaire

Contents:

This questionnaire should take no more than 30 minutes to complete.

Please turn over for your information sheet and detach this front cover and keep it for your records

Edge Hill University

INFORMATION SHEET

Title of project: **"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."**

Name of researcher: Paul Flanagan

This project aims to study language use and variation, focussing on how speakers of Sepedi deal with phrases which involve more than one adjective ahead of a noun, for example 'monna yô motêlêlê yô mosêsê' (the tall thin husband)

The questionnaire which follows should take no more than 30 minutes to complete and requires you to consider a variety of phrases which contain more than one adjective, asking you to decide in what order you might places these adjectives. An example is given at the start of the questionnaire.

Participants are asked to give the most spontaneous and natural responses possible, and to indicate the difficulty of each question. If more than one order is possible, please give the order which sounds most natural, and indicate the presence of multiple possible orders by giving the question a high difficulty rating (2 or 3). There is no right or wrong answer to any of these questions.

Participation in this project is completely voluntary, and no judgements will be made, positive or negative, based on participation or non-participation. This sheet features your unique personal Participant Reference Number (PRN- at the top of the page). The data supplied are completely anonymous and your PRN is the only information which will be stored with your data, which will be used as part of my PhD thesis.

If you decide that you no longer wish your data to be considered as part of this research project, you may withdraw without explanation at any point up to 30/7/2013. You should email the researcher on paul.flanagan@edgehill.ac.uk and must supply your PRN in order to withdraw your consent.

THANK YOU FOR TAKING THE TIME TO PARTICIPATE IN THIS PROJECT.

Edge Hill University

CONSENT FORM

Title of project: **"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."**

Name of researcher: Paul Flanagan

	Please tick box
I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	☐
I understand that my participation is voluntary and that I am free to withdraw by 30/7/13 without giving reason.	☐
Sepedi is my first language	☐
I agree to take part in this study.	☐

Signature of participant _____

Date _____

Signature of researcher _____

Date _____

Participant ref: | | | | |

Edge Hill University

THE QUESTIONNAIRE

For each question, rearrange the words in brackets and insert them on the dotted line in the order you feel most natural. An English translation is given. Give just **ONE** order for each. For each question, rank how difficult it was to choose an order-

2- Easy 2- Neither easy nor difficult 3- Difficult

Example:

1

Barwa ba babedi ba bagolo

……

(barwa, ba bagolo, ba babedi)

Two big sons

1. ……

(pêrê, ê tee, yê kaaka)

One horse this big

2. ……

(dieta, tše ntsho, tše pedi)

Two black shoes

3. ……

(mabôtô, a makoto, a mararo)

Three thick walls

4. ……

(dipotšišo, tše nne, tše thata)

4 difficult questions

5. ……..

(dintlo, tše mpsha, tše tlhano)

Five new houses

6. ……..

(mpša, yê kgolo, yê tshothwa)

A big brown dog

7. ……..

(hêmpe, yê botse, yê tala)

The beautiful green shirt

8. ……..

(bolo, yê khubedu, yê mpsha)

A new red ball

9. ……..

(dikuane, tše ntši, tše tshothwa)

Many brown hats

10. ……..

(phiri, yê kgolo, yê mpe)

The big bad wolf

11. ……..

(kgômogadi, yê nnyane, yê tona)

The small male cow

12. ……..

(basadi, ba bangwe, ba batêlêlê)

Other tall women

13. ……..

(beinê, yê bose. yê mpsha)

The delicious new wine

14. ……..

(modirô, wô mobjalo, wô mothata)

Such difficult work

15. ……..

(dimpša, tše kae, tše tala)

How many old dogs

16. ……..

(motho, ô tee, yô mobe, yô mongwe)

One other bad person

17. ……..

(mae, a mabose, a mannyane, a mašweu)

Delicious small white eggs

18. ……..

(sebjanatsopa, sê sebjang, sê sebotse, sê seso)

What kind of beautiful black vase

19. ……..

(makakô, a mabedi, a makoto, a mašweu)

Two thick white makako (porridge cakes)

20. ……..

(meagô, yê mengwe, yê meraro, yê metala)

Three other old buildings

21. ……..

(dikgabo, tše mpe, tše nnyane, tše tala, tše tsotho)

Small evil old brown monkeys

22. ……..

(dihlare, tše boima, tše koto, tše têlêlê)

Tall thick heavy trees

23. ……..

(ditšhwêne, tše befêtšwego, tše nanana, tše tona)

Angry young male baboons

24. ……..

(ditlôu tše dikae, tše dingwe, tše kgolo)

How many other big elephants

25. ……..

(barwarre, ba bakaaka, ba bantši)

Many brothers this big

26. ……..

(marotho, a bôleta, a mannyane, a matshothwa)

Small soft brown loaves

27. ……..

(dipuku, tše bjalô, tše tala, tše thata)

Difficult old books like that

28. ……..

(ditapola, tše monate, tše nne)

Four tasty potatoes

29. ……..

(barutiši, ba bantši, ba bohlale)

Many clever teachers

30. ……..

(kantôrô, ya selete, yê kgolo)

A big regional office

31. ……..

(banna, ba bašoro, ba dipolitiki)

Cruel political men

32. ……..

(bašemane, ba bararo, ba Basotho, ba borwa)

Three Southern Sotho (African) boys

33. ……..

(boramotse, ba bakae, ba batona, ba ma Afrika)

How many male African mayors

34. ……..

(Baprista, ba batala, ba go rapela)

Old praying priests

35. ……..

(Dinônyana, tša go opela, tše sorolwana)

Yellow singing birds

36. ……..

(Nku, ya go ja, yê nngwe, yê tshese)

Another thin eating sheep

37. ……..

(Dikolobê, tša go befa, tša go kitima, tše tlhano)

Five ugly running pigs

38. ……..

(Basetsana, ba baswa, ba batêlêlê, ba mafolofolo)

Tall energetic young girls

39. ……..

(sebjanatsopa, sa go kganya, sa Polokwane, sê sebjalo, sê segolo, sê setala)

Such a big, blue, shining Polokwane vase

PLEASE TURN OVER FOR THE FINAL PAGE

40. ……..
(Banna, ba babedi, ba go hlabana, ba maatla, ba bašoro)
Two cruel strong fighting men

41. How often would you say there is more than one potential order?

0-25% ☐ 25-50% ☐ 50-75% ☐ 75-100% ☐

42. Do you have any other comments?

……
……
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……

END OF QUESTIONNAIRE-
THANK YOU FOR YOUR TIME.

Cyfeirnod cyfrannu/ Participant ref:

W	E	1	5

A4

Edge Hill University

Prosiect Ymchwil Prifysgol Edge Hill

An Edge Hill University Research Project

"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."

by / gan Paul Flanagan

Casglu Data Cymraeg 2013 Welsh Data Collection

Holiadur / Questionnaire

Cynnwys / Contents:

Ni ddylai'r holiadur hwn gymryd mwy na 30 munud i'w gwblhau

This questionnaire should take no more than 30 minutes to complete.

Trowch y ddalen ar gyfer eich taflen wybodaeth

Please turn over for your information sheet.

Edge Hill University

TAFLEN WYBODAETH / INFORMATION SHEET

Teitl y prosiect / Title of project: **"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."**

Enw yr ymchwilydd / Name of researcher: Paul Flanagan

Bwriad y prosiect hwn yw astudio defnydd ac amrywiaeth ieithyddol, gan ganolbwyntio ar y modd y mae siaradwyr Cymraeg yn defnyddio ymadroddion sy'n cynnwys mwy nag un ansoddair sy'n disgrifio enw, er enghraifft 'the big black dog' yn Saesneg, neu 'ci mawr du' yn y Gymraeg.
This project aims to study language use and variation, focussing on how speakers of Welsh deal with phrases which involve more than one adjective describing a noun, for example 'the big black dog' in English, or 'ci mawr du' in Welsh.

Fe ddylai'r holiadur sy'n dilyn gymryd tua 30 munud i'w gwblhau. Gofynnir i chi ystyried amrywiaeth o ymadroddion sy'n cynnwys mwy nag un ansoddair ac ym mhob achos gofynnir i chi ddewis ym mha drefn y byddech yn gosod yr ansoddeiriau hyn. Ceir enghraifft ar ddechrau Adran A.
The questionnaire which follows should take around 30 minutes to complete and requires you to consider a variety of phrases which contain more than one adjective, in each case asking you to decide in what order you might place these adjectives. An example is given at the start of Section A.

Gofynnir i gyfrannwyr nodi'r atebion mwyaf digymell a naturiol. Nid oes atebion cywir neu anghywir i'r cwestiynau hyn.
Participants are asked to give the most spontaneous and natural responses possible. There is no right or wrong answer to any of these questions.

Byddwch yn cyfrannu i'r prosiect hwn ar sail cwbl wirfoddol ac ni chewch eich barnu mewn modd cadarnhaol neu negyddol ar sail eich penderfyniad i gyfrannu neu beidio. Cyn cyflwyno eich holiadur, dylech yn gyntaf dynnu'r ddalen hon, sy'n cynnwys eich Cyfeirnod Cyfrannu (CC ar frig y ddalen). Mae'r

data a gyflwynir yn gwbl ddienw a'ch CC yw'r unig wybodaeth a fydd yn cael ei storio gyda'ch data.
Participation in this project is completely voluntary, and no judgements will be made, positive or negative, based on participation or non-participation. Before submitting your questionnaire, you should first remove this sheet, which features your unique personal Participant Reference Number (PRN- at the top of the page). The data supplied are completely anonymous and your PRN is the only information which will be stored with your data.

Defnyddir y data ar gyfer fy thesis PhD ac unrhyw gyhoeddiadau dilynol, ond nid ar gyfer budd ariannol personol. Os ydych yn penderfynu nad ydych yn dymuno i'ch data gael ei ystyried yn y prosiect ymchwil hwn, gallwch dynnu nôl heb esboniad unrhyw bryd cyn 18/12/2013. Er mwyn tynnu nôl dylech e-bostio'r ymchwilydd *paul.flanagan@edgehill.ac.uk* gan nodi eich CC.
Data will be used in my PhD thesis and any subsequent publications but not for any personal financial gain. If you decide that you no longer wish your data to be considered as part of this research project, you may withdraw without explanation at any point up to 18/12/2013. You should email the researcher on paul.flanagan@edgehill.ac.uk and must supply your PRN in order to withdraw your consent.

DIOLCH AM GYFRANNU I'R PROSIECT HWN.
THANK YOU FOR TAKING THE TIME TO PARTICIPATE IN THIS PROJECT.

Cyfeirnod cyfrannu

Participant ref: | W | 0 | | |

Edge Hill University

FFURFLEN GANIATÂD / CONSENT FORM

Teitl y prosiect / Title of project: **"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."**

Enw yr ymchwilydd / Name of researcher: Paul Flanagan

	Ticiwch y blwch ***Please tick box***
Yr wyf wedi darllen y dudalen wybodaeth ar gyfer yr astudiaeth uchod ac wedi cael cyfle i ofyn cwestiynau. *I have read and understand the information sheet for the above study and have had the opportunity to ask questions.*	☐
Yr wyf yn deall fy mod yn cyfrannu'n wirfoddol ac y gallaf tynnu nôl erbyn 18/12/13 heb nodi rheswm. *I understand that my participation is voluntary and that I am free to withdraw by 18/12/13 without giving reason.*	☐
Mae'r Gymraeg yn iaith gyntaf i mi. *I am a native speaker of Welsh.*	☐
Yr wyf yn cytuno i gymryd rhan yn yr astudiaeth hon. *I agree to take part in this study.*	☐

Llofnod y cyfrannwr/cyfranwraig
Signature of participant _____

Dyddiad / Date _____

Llofnod yr ymchwilydd
Signature of researcher _____

Dyddiad / Date _____

YR HOLIADUR / THE QUESTIONNAIRE:

Ar gyfer pob cwestiwn, gwnewch y canlynol os gwelwch yn dda:
For each question, please:

Rhowch '**tick**' nesaf at y drefn sydd yn swnio **fwyaf naturiol** i chi. Ticiwch UN drefn yn unig, os gwelwch yn dda.
*Place a **tick** next to the order which you feel sounds **most natural**. Please tick just ONE order.*

Rhowch **groes** nesaf at unrhyw drefn sydd yn swnio'n **anghywir** neu'n **annaturiol** yn eich barn chi.
*Place a **cross** next to any orders which you feel sound **wrong** or **unnatural**.*
You may place as many or as few crosses as you feel appropriate

Enghraifft / Example:

y gath ddiog fawr ddu	✓
y gath ddiog ddu fawr	×
y gath ddu fawr ddiog	×
y gath ddu ddiog fawr	×
y gath fawr ddu ddiog	
y gath fawr ddiog ddu	

Mae'r dewisiadau uchod yn awgrymu:
The selections above suggest that:

a. *y gath ddiog fawr ddu* sounds the most natural / sydd fwyaf naturiol.

b. *y gath ddiog ddu fawr, y gath ddu fawr ddiog* & *y gath ddu ddiog fawr* all sound wrong or unnatural. Mae'r enghraifft yn swnio'n anghywir neu yn annaturiol

c. The unchecked phrases are acceptable but not as natural-sounding as the first phrase.
. Mae'r ymadroddion a nodir â chroes yn dderbyniol ond nid ydynt yn swnio mor naturiol â'r ymadrodd cyntaf.

ADRAN / SECTION A: (25 cwestiwn / questions)

1. ci llwyd mawr Saesneg
   ci llwyd Saesneg mawr
   ci mawr llwyd Saesneg
   ci mawr Saesneg llwyd
   ci Saesneg llwyd mawr
   ci Saesneg mawr llwyd
   (Big grey English dog)

2. cyn dyn tân bach tenau
   cyn dyn tân tenau bach
   cyn dyn tân bach a tenau
   cyn dyn tân tenau a bach
   (Small thin former fireman)

3. drws newydd o goed trwm
   drws newydd trwm o goed
   drws o goed trwm newydd
   drws o goed newydd trwm
   drws trwm o goed newydd
   drws trwm o goed newydd
   (Heavy new wooden door)

4. tŷ bach Cymreig hyll
   tŷ bach hyll Cymreig
   tŷ Cymreig bach hyll
   tŷ Cymreig hyll bach
   tŷ hyll bach Cymreig
   tŷ hyll Cymreig bach
   (ugly little Welsh house/ugly Welsh toilet)

5. myfyrwyr deallus gweithgar tramor
   myfyrwyr deallus tramor gweithgar
   myfyrwyr gweithgar deallus tramor
   myfyrwyr gweithgar tramor deallus
   myfyrwyr tramor deallus gweithgar
   myfyrwyr tramor gweithgar deallus
   (Intelligent, hard-working foreign students)

6. newyddion difrifol rhyngwladol gwleidyddol
   newyddion difrifol gwleidyddol rhyngwladol
   newyddion gwleidyddol rhyngwladol difrifol
   newyddion gwleidyddol difrifol rhyngwladol
   newyddion rhyngwladol difrifol gwleidyddol
   newyddion rhyngwladol gwleidyddol difrifol
   (Serious international political news)

7. morwr hapus meddw yn canu
   morwr hapus yn canu meddw
   morwr meddw hapus yn canu
   morwr meddw yn canu hapus
   morwr yn canu hapus meddw
   morwr yn canu meddw hapus
   (A happy drunken singing sailor)

8. crys cotwm gwyrdd prydferth
   crys cotwm prydferth gwyrdd
   crys gwyrdd cotwm prydferth
   crys gwyrdd prydferth cotwm
   crys prydferth cotwm gwyrdd
   crys prydferth gwyrdd cotwm
   (A beautiful green cotton shirt)

9. cath gysglyd frech ifanc
   cath gysglyd ifanc frech
   cath frech gysglyd ifanc
   cath frech ifanc gysglyd
   cath ifanc gysglyd frech
   cath ifanc frech gysglyd
   (A sleepy young tabby cat)

10. yr heddwas blin dig newydd
    yr heddwas blin newydd dig
    yr heddwas dig blin newydd
    yr heddwas dig newydd blin
    yr heddwas newydd blin dig
    yr heddwas newydd dig blin
    (The angry irritable new policeman)

11. yr eliffant Affricaidd enfawr blinedig
    yr eliffant Affricaidd blinedig enfawr
    yr eliffant blinedig Affricaidd enfawr
    yr eliffant blinedig enfawr Affricaidd
    yr eliffant enfawr Affricaidd blinedig
    yr eliffant enfawr blinedig Affricaidd
    (The gigantic exhausted African elephant)

12. cyfreithiwr tal golygus yn gwenu
    cyfreithiwr tal yn gwenu golygus
    cyfreithiwr golygus tal yn gwenu
    cyfreithiwr golygus yn gwenu tal
    cyfreithiwr yn gwenu golygus tal
    cyfreithiwr yn gwenu tal golygus
    (A tall handsome smiling lawyer)

13. chwedl animeiddiedig Ffrengig werin
    chwedl animeiddiedig werin Ffrengig
    chwedl Ffrengig animeiddiedig wern
    chwedl Ffrengig werin animeiddiedig
    chwedl werin animeiddiedig Ffrengig
    chwedl werin Ffrengig animeiddiedig
    (An animated French folk story)

14. peli glas sfferig yn sboncio
    peli glas yn sboncio sfferig
    peli sfferig glas yn sboncio
    peli sfferig yn sboncio glas
    peli yn sboncio glas sfferig
    peli yn sboncio sfferig glas
    (Bouncing blue spherical balls)

15. y ddwy ferch dlysaf ifanc
    y ddwy ferch ifanc dlysaf
    y ddwy dlysaf ferch ifanc
    y dlysaf ferch ifanc dwy
    y dlysaf dwy ferch ifanc
    (The most beautiful two young ladies)

16. blwch diwerth gwag hen
blwch diwerth hen gwag
blwch gwag diwerth hen
blwch gwag hen diwerth
blwch hen diwerth gwag
blwch hen gwag diwerth
hen blwch diwerth gwag
hen blwch gwag diwerth

(A useless empty old box)

17. teimlad glân rhyfeddol
teimlad rhyfeddol glân
(A wonderful clean feeling)

18. ein dau arferol bryd poeth Tsieineaidd
ein dau arferol bryd Tsieineaidd poeth
ein dau bryd arferol poeth Tsieineaidd ein dau bryd arferol Tsieineaidd poeth
ein dau bryd poeth Tsieineaidd arferol
ein dau bryd poeth arferol Tsieineaidd ein dau bryd Tsieineaidd arferol poeth
ein dau bryd Tsieineaidd poeth arferol
(Our usual two hot Chinese meals)

19. sliperi bach hudolus glas
sliperi bach glas hudolus
sliperi hudolus bach glas
sliperi hudolus glas bach
sliperi glas bach hudolus
sliperi glas hudolus bach
(Magic little blue slippers)

20. wyneb brawychus tenau tywyll
wyneb brawychus tywyll tenau
wyneb tenau brawychus tywyll
wyneb tenau tywyll brawychus
wyneb tywyll brawychus tenau
wyneb tywyll tenau brawychus
(A scary thin dark face)

21. ci blinedig byr ei wynt
ci byr ei wynt blinedig
(An exhausted panting dog)

22. dyn tal yn rhedeg
dyn yn rhedeg tal
(A tall running man)

23. dŵr yn ageru berw
dŵr berw yn ageru
dŵr yn ageru wedi'i ferwi
(Steaming boiled water)

24. wyau bach blasus gwyn
wyau bach gwyn blasus
wyau blasus bach gwyn
wyau blasus gwyn bach
wyau gwyn bach blasus
wyau gwyn blasus bach
(Delicious small white eggs)

25. hen fwncïod benywaidd drwg llwyd
hen fwncïod benywaidd llwyd drwg
hen fwncïod drwg benywaidd llwyd
hen fwncïod drwg llwyd benywaidd
hen fwncïod llwyd benywaidd drwg
hen fwncïod llwyd drwg benywaidd
(Evil old grey female monkeys)

TROWCH Y DDALEN AR GYFER ADRAN B OS GWELWCH YN DDA

PLEASE TURN OVER FOR SECTION B.

ADRAN / SECTION B: (5 cwestiwn / questions)

Yn yr adran hon, dylech aildrefnu'r ansoddeiriau mewn cromfachau **er mwyn rhoi'r drefn sydd fwyaf naturiol i'r glust**.

*In this section, you should rearrange the adjectives in brackets to give **the most natural sounding order**.*

ENGHRAIFFT / EXAMPLE:

Gardd (Fictoraidd/ furiog/ hen/ hyfryd):

Hen ardd furiog hyfryd Fictoraidd

(a delightful old Victorian walled garden)

26. y glaniad (Americanaidd/ lleuad/ cyntaf/ enwog)

_ _

(The famous American first moon landing)

27. bwrdd (drud/ gwyn/ hir/ llyfn)

_ _

(A long smooth expensive white table)

28. tŷ (arferol/ Fictoraidd/ gwladaidd/ mawr/ tywyll)

_ _

(A typical big gloomy Victorian country house)

29.y pêl (crwn/ melyn/ mwyaf/ plastig)

_ _

(The biggest round yellow plastic ball)

TROWCH DROSODD AR GYFER Y CWESTIWN OLAF
PLEASE TURN OVER FOR THE FINAL QUESTION.

30. Sut, os o gwbl, y mae'r ystyr yn newid os ydych yn amrywio trefn yr ansoddeiriau?
How, if at all, does the meaning change if you vary the order in which you place the adjectives?

……

……

……

……

……

……

……

……

DIWEDD YR HOLIADUR – DIOLCH AM EICH AMSER

END OF QUESTIONNAIRE- THANK YOU FOR YOUR TIME

Participant ref: C 0 [ ] [ ]

A5

Edge Hill University

An Edge Hill University Research Project

"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."

by Paul Flanagan

Chinese (Mandarin) Data Collection 2013

Questionnaire

Contents:

This questionnaire should take no more than 30 minutes to complete.

Please turn over for your information sheet.

Edge Hill University

INFORMATION SHEET

Title of project: **"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."**

Name of researcher: Paul Flanagan

This project aims to study language use and variation, focussing on how speakers of Chinese (Mandarin) deal with phrases which involve more than one adjective describing a noun, for example 'the small black cat' in English, or 'xiǎo hēi māo' in Chinese (Mandarin).

The questionnaire **should take around 30 minutes** to complete and requires you to consider ten sentences which contain more than one adjective, in each case asking you to decide in what order you might places these adjectives. An example is given at the start of Section A.

Participants are asked to give the **most spontaneous and natural responses** possible. There is no right or wrong answer to any of these questions. We will then discuss our answers with the group and consider which questions have more than one potential order.

Participation in this project is **completely voluntary**, and no judgements will be made, positive or negative, based on participation or non-participation. Before submitting your questionnaire, you should first remove this sheet, which features your unique personal Participant Reference Number (PRN- at the top of the page). The data supplied are completely anonymous and your PRN is the only information which will be stored with your data.

Data will be used in my PhD thesis and any subsequent publications but not for any personal financial gain If you decide that you no longer wish your data to be considered as part of this research project, **you may withdraw without explanation at any point up to 18/12/2013**. You should email the researcher on paul.flanagan@edgehill.ac.uk and must supply your PRN in order to withdraw your consent.

THANK YOU FOR TAKING THE TIME TO PARTICIPATE IN THIS PROJECT.

Participant ref: C 0 ☐ ☐

Edge Hill University

CONSENT FORM

Title of project: **"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."**

Name of researcher: Paul Flanagan

	Please tick box
I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	☐
I understand that my participation is voluntary and that I am free to withdraw by 18/12/13 without giving reason.	☐
Chinese (Mandarin) is my first language, spoken from birth	☐
I agree to take part in this study.	☐

Signature of participant _____

Date _____

Signature of researcher _____

Date _____

THE QUESTIONNAIRE:

For each question, rearrange the adjectives in brackets and insert them on the **dotted line** in the order you feel **most natural**. Give just ONE order for each. Please ask if the meaning is unclear.

Example:

xiǎo hēi

…….. (hēi/ xiǎo) māo zhuā dào lǎoshǔ

（黑 / 小）猫 抓 到 老 鼠

By writing the adjectives in the order above, the suggestion is that *xiǎo hēi māo* sounds more natural that *hēi xiǎo māo*.

Please also include the character **的** (de) in your answers where it feels natural.

SECTION A:

1. Nàgè …… xuéshēng chī le suóyǒu de règǒu
   (měiguó / pang)
   那个 (美国 / 胖) 学生 吃了 所有 的 热狗

2. …… xié zài fànzhuō shāng
   (hóng/ lìngwài yī/ zhī)
   (红**/ 另外一 / 只) 鞋 在** 饭 桌 **上**

3. Zhèxīe háizí pà nàgè …… nánrén
   (hóu / nù)
   这 些 **孩 子 怕 那 个 (吼 / 怒) 男 人**

4. Zhègè …… gǎngwèi xūyào yí gè zhuānjia
(gōngyè / kùnnán)
这 **个 (工** 业 **/ 困** 难 **)** 岗 位 **需 要 宜 个** 专 家

5. Māmā mǎile yī …… qì
(diàn/ guóchǎn/ táixīn)
妈 妈 买 了 **一 (**电**/ 国** 产**/ 台 新) 器**

6. Zǒngtǒng fābiǎo le …… xuānyán
(xià yīgè/ zhèngzhì / zhòngyào)
总 统 发 表 **了 (下 一 个/ 政 治/ 重 要) 宣 言**

7. Nàgè …… xīngxīng zài bǎohù tā de háizí
(mǔ/ piàoliàng/ qiáng/ zhuàng)
那 个 (母/ 漂 亮 / 强 **/ 壮) 猩 猩 在 保** 护 她 **的 孩 子**

8. zhùyì bì kāi zhè xiē …… bōlí
(fēnglì/ lǜsè/ suì)
注 意 避 开 这 **些 (**锋 利 **/** 绿 色 **/ 碎) 玻 璃**

9. Nàgè …… guìlǐ zi bù mǎnle zhīzhū wǎng
(gāo/ jiù/ mù/ zōngsè)
那 个 (高 / 旧 / 木 / 棕 色) 柜 **里 部 布** 满 **了 蜘 蛛 网**

10. Babe shì yīgè ……
zhū (báisè/ huì shuōhuà/ mǔ/ niánqīng/ xiǎo gètóu)

贝 贝 **是 一 个(白 色 /会** 说 话 **/母/ 年** 轻 **/小 个** 头**) 猪**
(Babe is a small white young female talking pig)

PLEASE TURN OVER FOR SECTION B

SECTION B:

In your groups, please reflect on the following questions for each of the ten sentences in **SECTION A**:

1. Is there more than one possible order for the words in brackets?

……

……

……

……

……

……

2. Are there any orders which are definitely **not** possible?

……

……

……

……

……

……

3. Does changing the order of adjectives change the overall meaning?

……

……

……

……

……

END OF QUESTIONNAIRE: THANK YOU FOR TAKING PART!

Participant ref: P 0 [ ] [ ]

A6

Edge Hill University

An Edge Hill University Research Project

"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."

by Paul Flanagan

Polish Data Collection 2013

Questionnaire

Contents:

This questionnaire should take no more than 30 minutes to complete.

Please turn over for your information sheet.

Edge Hill University

INFORMATION SHEET

Title of project: **"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."**

Name of researcher: Paul Flanagan

This project aims to study language use and variation, focussing on how speakers of Polish deal with phrases which involve more than one adjective describing a noun, for example 'the small black cat' in English, or 'mały czarny kot' in Polish.

The questionnaire **should take around 30 minutes** to complete and requires you to consider ten sentences which contain more than one adjective, in each case asking you to decide in what order you might places these adjectives. An example is given at the start of Section A.

Participants are asked to give the **most spontaneous and natural responses** possible. There is no right or wrong answer to any of these questions. We will then discuss our answers with the group and consider which questions have more than one potential order.

Participation in this project is **completely voluntary**, and no judgements will be made, positive or negative, based on participation or non-participation. Before submitting your questionnaire, you should first remove this sheet, which features your unique personal Participant Reference Number (PRN- at the top of the page). The data supplied are completely anonymous and your PRN is the only information which will be stored with your data.

If you decide that you no longer wish your data to be considered as part of this research project, **you may withdraw without explanation at any point up to 30/11/2013**. You should email the researcher on paul.flanagan@edgehill.ac.uk and must supply your PRN in order to withdraw your consent.

THANK YOU FOR TAKING THE TIME TO PARTICIPATE IN THIS PROJECT.

Participant ref: | P | 0 | | |

Edge Hill University

CONSENT FORM

Title of project: **"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."**

Name of researcher: Paul Flanagan

	Please tick box
I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	☐
I understand that my participation is voluntary and that I am free to withdraw by 30/11/13 without giving reason.	☐
Polish is my first language, spoken from birth	☐
I agree to take part in this study.	☐

Signature of participant _____

Date _____

Signature of researcher _____

Date _____

THE QUESTIONNAIRE:

For each question, rearrange the words in brackets and insert them on the **dotted line** in the order you feel **most natural**. Give just ONE order for each. Please ask if the meaning is unclear.

Example:

Mały czarny kot

…….. (czarny/ kot/ mały) złapał mysz

By writing the adjectives in the order above, the suggestion is that *mały czarny kot* sounds more natural that *czarny mały kot*.

SECTION A:

1. …….. zjadł wszystkie hot dogi.
   (z Ameryki/ gruby/ student)

2. …….. leżał na stole.
   (but/ czerwony/ drugi)

3. Dzieci bały się ……..
   (krzyczącego/ mężczyzny/ zdenerwowanego)

4. Ta …….. wymagała pomocy specjalisty.
   (fabryczna/ praca/ trudna)

5. Mama kupiła ……..
(do domu/ elektryczne/ nowe/ urządzenie)

6. Prezydent wydał ……..
(kolejne/ oświadczenie/ polityczne/ ważne)

7. Ta …….. broniła swoich dzieci.
(goryla/ piękna/ samica/ silna)

8. Uważaj na to ……
(ostre/ porozbijane/ szkło/ zielone)

9. W tej …….. jest pełno pajęczyn.
(brązowej/ drewnianej/ dużej/ starej/ szafie)

10. Babe to ……..
(biała/ która/ mała/ młoda/ mówi/ świnka)

PLEASE TURN OVER FOR SECTION B

SECTION B:

In your groups, please reflect on the following questions for each of the ten sentences in **SECTION A**:

4. Is there more than one possible order for the words in brackets?

……

……

……

……

……

……

5. Are there any orders which are definitely **not** possible?

……

……

……

……

……

……

6. Does changing the order of adjectives change the overall meaning?

……

……

……

……

……

END OF QUESTIONNAIRE: THANK YOU FOR TAKING PART!

Participant ref: | T | 0 | | |

A7

Edge Hill University

An Edge Hill University Research Project

"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."

by Paul Flanagan

Tagalog/ Filipino Data Collection 2013

Questionnaire

Contents:

This questionnaire should take no more than 30 minutes to complete.

Please turn over for your information sheet.

Edge Hill University

INFORMATION SHEET

Title of project: **"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."**

Name of researcher: Paul Flanagan

This project aims to study language use and variation, focussing on how speakers of Tagalog/ Filipino deal with phrases which involve more than one adjective describing a noun, for example 'the small black cat' in English, or 'ang maliit na itim na pusa' in Tagalog/ Filipino.

The questionnaire **should take around 15 minutes** to complete and requires you to consider ten sentences which contain more than one adjective, in each case asking you to decide in what order you might places these adjectives. An example is given at the start of Section A.

Participants are asked to give the **most spontaneous and natural responses** possible. There is no right or wrong answer to any of these questions. We will then discuss our answers with the group and consider which questions have more than one potential order.

Participation in this project is **completely voluntary**, and no judgements will be made, positive or negative, based on participation or non-participation. Before submitting your questionnaire, you should first remove this sheet, which features your unique personal Participant Reference Number (PRN- at the top of the page). The data supplied are completely anonymous and your PRN is the only information which will be stored with your data.

If you decide that you no longer wish your data to be considered as part of this research project, **you may withdraw without explanation at any point up to 15/12/2013**. You should email the researcher on paul.flanagan@edgehill.ac.uk and must supply your PRN in order to withdraw your consent.

THANK YOU FOR TAKING THE TIME TO PARTICIPATE IN THIS PROJECT.

Participant ref: | T | 0 | | |

Edge Hill University

CONSENT FORM

Title of project: **"A Cross-linguistic investigation into the ordering of sequences of attributive adjectives."**

Name of researcher: Paul Flanagan

	Please tick box
I have read and understand the information sheet for the above study and have had the opportunity to ask questions.	☐
I understand that my participation is voluntary and that I am free to withdraw by 15/12/13 without giving reason.	☐
Tagalog/ Filipino is my first language, spoken from birth	☐
I agree to take part in this study.	☐

Signature of participant _____

Date _____

Signature of researcher _____

Date _____

THE QUESTIONNAIRE:

For each question, rearrange the words in brackets and insert them on the **dotted line** in the order and form which feels **most natural**. Give just ONE order for each, and insert *na* or add *–ng* where appropriate

Example:

maliit na itim na pusa

ang …….. (pusa, itim, maliit,) nahuli ang daga

By writing the adjectives in the order above, the suggestion is that *ang maliit na itim na pusa* sounds more natural than other orders such as:

ang itim na maliit na pusa
ang pusang itim na maliit or
ang maliit na pusang itim.

SECTION A:

1. Kinain ng ……..

   (Amerikano, estudyante, mataba) lahat ng hot dog

2. Dating nasa mesa ang ……

   (kabila, pula, sapatos)

3. Natakot ang mga bata sa ……..

   (galit, mama, sumisigaw)

4. Nangailangan ng isang eksperto ang …….

(mahirap, pang-industriya, trabaho)

5. Bumili ang nanay ng isang …….

(bago, de-kuryente, kagamita, pangbahay)

6. Ibinigay ng pangulo ang ……..

(mahalaga, pahayag, pulitikal, susunod)

7. Ipinagtatanggol ng …….

(babae, gorilya, maganda, malakas) ang kanyang mga anak

8. Siguraduhin mong iwasan ang ……..

(basag, berde, matalas, salamin)

9. Puno ng mga agiw ang …….

(kabinet, kahoy, kulay-kayumanggi, luma, mataas)

10. Si Babe ay isang ……

(babae, baboy, bata, maliit, nagsasalita, puti)

PLEASE TURN OVER FOR THE LAST PAGE

SECTION B:

In your groups, please reflect on the following questions for each of the ten sentences in **SECTION A**:

7. Is there more than one possible order for the words in brackets?

……

……

……

……

……

……

8. Are there any orders which are definitely **not** possible?

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……

……

……

……

……

9. Does changing the order of adjectives change the overall meaning?

……

……

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……

END OF QUESTIONNAIRE- THANK YOU FOR TAKING PART IN THE PROJECT